DIGITAL ACCESS TO SCHOLARSHIP AT HARVARD
DASH.HARVARD.EDU

HARVARD LIBRARY
Office for Scholarly Communication

Feature Mismatch: Deponency in Indo-European Languages

Citation
Grestenberger, Laura. 2014. Feature Mismatch: Deponency in Indo-European Languages. Doctoral dissertation, Harvard University.

Permanent link
http://nrs.harvard.edu/urn-3:HUL.InstRepos:12274624

Terms of Use
This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA

Share Your Story

The Harvard community has made this article openly available.
Please share how this access benefits you. Submit a story .

Accessibility

Feature mismatch

Deponency in Indo-European Languages

A dissertation presented
by

Laura Grestenberger

to

The Department of Linguistics

in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy
in the subject of
Linguistics

Harvard University
Cambridge, Massachusetts

May 2014

© *2014 – Laura Grestenberger*

All rights reserved.

Dissertation advisors: Prof. Jay Jasanoff, Prof. Sabine Iatridou Laura Grestenberger

Feature mismatch

Deponency in Indo-European Languages

Abstract

This thesis investigates "voice mismatch verbs" (deponents), verbs that take non-active morphology but are used in syntactically active environments. The focus is on the non-informant Indo-European languages Hittite, Vedic Sanskrit, Ancient Greek, and Latin, supplemented by data from Modern Greek.

On the empirical side, this thesis contributes to the debate on the status of the external argument of deponents by showing that the surface subjects of deponents are agents (rather than experiencers). It furthermore adds new evidence to the question of whether or not mismatch behavior is continued in the non-finite formations of deponent verbs by providing a discussion of the microvariation and general typology of deponents in Indo-European.

I propose an analysis of agentive deponents in bivalent ("Greek-type") voice systems that derives their properties from the nature of these voice systems, in particular the fact that non-active morphology is not valency-reducing, but spelled out post-syntactically together with tense and agreement features if vP does not introduce an external argument. I argue that this happens in deponents because their roots are lexically specified to merge their agent argument below vP. Evidence for this comes from the link between deponent behavior and verbalizing morphology in the Indo-European languages studied here. This behavior may moreover be linked to particular aspect/Aktionsart morphology.

This analysis has implications for our understanding of the interaction between middle and passive morphology in these languages, as well as of non-alternating verbs (verbs that take only active or only non-active morphology) in general. I also argue that it correctly

predicts whether or not deponent behavior is continued in non-finite formations of deponents.

A central goal of this thesis is the investigation of deponents both from a synchronic and a diachronic perspective. While chapters 2-5 are concerned with the synchronic aspects of deponency, chapter 6 discusses the ramifications for the reconstruction of the Proto-Indo-European (PIE) voice system. I argue that it is possible to reconstruct voice mismatches for the proto-language and discuss examples of such PIE deponents. The Appendix furthermore contains a collection and discussion of the Indo-European deponents on which this study is based.

Contents

Acknowledgments **ix**

Abbreviations **xiii**

1 Deponents as "feature mismatch" verbs **1**

1.1 Introduction . . . 1
1.2 Background and terminology . . . 3
1.3 Texts and methods . . . 6
1.4 Overview: Properties of deponent verbs . . . 9
1.5 Deponency in non-Indo-European languages . . . 12
1.6 Outline of this thesis . . . 15

2 Deriving canonical middle verbs **19**

2.1 Introduction . . . 19
2.2 The canonical functions of non-active morphology . . . 20
2.2.1 Anticausatives . . . 22
2.2.2 Reflexives and reciprocals . . . 25
2.2.3 Dispositional middles . . . 33
2.2.4 (Medio)passives . . . 37
2.2.5 Self-benefactives . . . 41
2.2.6 Summary . . . 48
2.3 Non-oppositional uses of middle morphology . . . 48
2.3.1 Denominal and deadjectival verbs . . . 51
2.3.2 Experiencer verbs . . . 55
2.3.3 Verbs of speech and communication . . . 60
2.3.4 Summary . . . 62
2.4 Delimiting non-canonical middles . . . 63
2.5 Is non-active morphology valency-reducing? . . . 67
2.6 Non-active as a property of vP . . . 71

2.7 Summary . . . 78

3 The typology of deponents in Indo-European languages 79

3.1 Introduction . . . 79
3.2 Vedic Sanskrit . . . 79
3.2.1 The Vedic Voice system . . . 80
3.2.2 Classification of Vedic middles . . . 82
3.2.3 Non-finite forms . . . 85
3.3 Ancient Greek . . . 88
3.3.1 The Greek Voice system . . . 88
3.3.2 Classification of Greek non-alternating middles . . . 90
3.3.3 Non-finite forms . . . 92
3.4 Latin . . . 93
3.4.1 The Latin Voice system . . . 93
3.4.2 Classification of Latin non-active-only verbs . . . 98
3.4.3 Non-finite forms . . . 101
3.5 Hittite . . . 103
3.5.1 The Hittite Voice system . . . 103
3.5.2 Classification of Hittite non-active-only verbs . . . 104
3.5.3 Non-finite forms . . . 105
3.6 Modern Greek . . . 106
3.6.1 The Modern Greek Voice system . . . 106
3.6.2 Classification of Modern Greek non-active-only verbs . . . 108
3.6.3 Non-finite forms . . . 110
3.7 Summary . . . 115

4 Explaining the mismatch 118

4.1 Previous approaches to deponency . . . 118
4.1.1 Deponency as lexical idiosyncrasy . . . 121
4.1.2 Deponency as a lexical-semantic phenomenon . . . 126
4.1.3 Summary . . . 129
4.2 Deponents are agentive . . . 129
4.2.1 Agent nouns . . . 131
4.2.2 Passivization . . . 135
4.2.3 Agent-oriented adverbs . . . 139
4.2.4 Summary . . . 141
4.3 Deriving deponents . . . 141
4.4 Motivating "low agents" . . . 151

4.4.1 Agency and Aspect . . . 155
4.4.2 A brief note on semi-deponents . . . 171
4.4.3 More on *v*[AG] . . . 174
4.5 Summary . . . 178

5 Implications: active, middle, and passive in bivalent voice systems 180
5.1 Middle and passive . . . 180
5.2 *Activa tantum*: active as default . . . 191
5.3 Where have all the English deponents gone? . . . 196
5.4 Non-finite formations . . . 203
5.5 Summary . . . 215

6 Reconstructing Proto-Indo-European deponents 216
6.1 The Proto-Indo-European middle . . . 217
6.2 Proto-Indo-European deponents . . . 225
6.2.1 **deh₂-i̯-* 'divide, distribute' . . . 227
6.2.2 **h₁u̯eg^{uh}* 'speak solemnly, praise' . . . 228
6.2.3 **peh₂-s* 'protect' . . . 228
6.2.4 **h₂neh₃* 'scorn, reprimand' . . . 231
6.2.5 **med* 'measure (out), discern' . . . 232
6.2.6 **i̯i-i̯eh₂-* 'demand, seek' . . . 236
6.3 Possible Proto-Indo-European deponents . . . 237
6.3.1 **u̯er* 'protect; fend off, stop' . . . 237
6.3.2 **treH*/**trā* 'protect' . . . 239
6.3.3 **gres*/*gras* 'devour' . . . 240
6.3.4 Summary . . . 241
6.4 Inner-Indo-European deponents . . . 242
6.4.1 **h₂ei̯sd* 'praise, revere' . . . 242
6.4.2 **h₃ek^{u}* 'behold, catch sight of' . . . 243
6.4.3 **Hei̯k̂* 'appropriate, seize' . . . 243
6.4.4 **sek^{u}* 'join, accompany, follow' . . . 244
6.4.5 **h₁erĝ^{h}* 'climb up, onto' . . . 247
6.4.6 1. **u̯es* 'wear clothes' . . . 248
6.4.7 3. **u̯es* 'graze, eat' . . . 251
6.4.8 ?**poti̯e/o-* 'be master over, own' . . . 252
6.4.9 Summary . . . 252
6.5 Proto-Indo-European middle aorists . . . 253
6.6 Conclusion . . . 257

7 Conclusion **261**

Appendix **265**

A. Hittite . . . 265

A.I Introduction . . . 265

A.II Deponents in *-a(ri)* . . . 265

A.III Deponents in *-(a)tta(ri)* . . . 273

B. Vedic . . . 276

B.I Introduction . . . 276

B.II Vedic deponents . . . 276

B.III Unclear cases . . . 291

C. Avestan . . . 294

D. Greek . . . 296

D.I Introduction . . . 296

D.II Greek deponents . . . 296

D.III Unclear cases . . . 312

D.IV Denominal and deadjectival deponents . . . 314

E. Latin . . . 315

E.I Introduction . . . 315

E.II Latin deponents . . . 315

E.III Unclear cases . . . 338

E.IV Denominal and deadjectival deponents . . . 341

References **343**

Acknowledgments

I owe thanks to quite a few people for supporting me over the last five years, and I want to start by thanking my *Doktorvater* Jay Jasanoff, whose book "Hittite and the Indo-European verb" was the reason I came to Harvard. Jay has been the best academic advisor anyone could hope for, and this dissertation is very much inspired by his work. I am deeply indebted to him for his insightful comments, his mentorship, and his endless patience.

I am likewise indebted to the other members of my fantastic dissertation committee, Sabine Iatridou, Jeremy Rau, and Isabelle Charnavel. Sabine has been incredibly generous in agreeing to work with me and making time for this project, and her criticism and comments have improved it beyond measure. Jeremy's support and advising were crucial during my first year at Harvard, and his detailed comments have shaped the comparative and Indo-Europeanist chapters of this dissertation. Isabelle's knowledge of both ancient and modern Indo-European languages has greatly helped me in formulating problems and generalizations that hold for both, and her insistence on considering both the syntactic and semantic consequences of my proposals has guided me past many obstacles. Her enthusiasm and encouragement moreover prevented the despair that is usually inevitable during the writing process.

Because of the nature of this project, which combines historical linguistics and comparative reconstruction with syntactic theory, all of my committee members were occasionally confronted with data and theoretical machinery that is outside their own research interests, and I was overwhelmed by their willingness to engage with it and the insights they provided. Their encouragement to pursue this topic and their support made writing this dissertation a very enjoyable (and painless) experience.

I moreover owe thanks to the faculty of the Harvard Department of Linguistics, most of all Gennaro Chierchia for his academic and professional mentorship, as well as Jim Huang, Masha Polinsky, and Kevin Ryan, all of whom were generous in providing comments and support at different stages of my graduate studies. I am also very grateful to Amy Rose Deal and Uli Sauerland for their support during their stay at Harvard.

Life at Harvard would have been very difficult without the help of our department administrators Cheryl Murphy, Helen Lewis, and Kate Pilson, and I would like to thank them for making everything run so smoothly.

My M.A. thesis advisor at the University of Vienna, Melanie Malzahn, has provided constant guidance and mentoring over the past five years. Melanie deeply cares about her students and the field, and we all owe her more than words can express.

This dissertation has furthermore profited immensely from discussion with Craig Melchert, Bronwyn Bjorkman, and Despina Oikonomou, all of whom took the time to read and comment on different chapters of previous drafts, and I would like to thank them for their interest in my work and their help in improving it. I am also grateful to Elena Anagnostopoulou, Benjamin Bruening, Jason Merchant, and Jim Wood for comments and suggestions on different aspects of this thesis.

My fellow (former and current) graduate students at Harvard, with whom I shared all the ups and downs (mostly ups) of graduate student life, also contributed in no small part. In particular, I want to thank Laine Stranahan for being so smart and funny and always ready to provide wise words, hilarious gifs, and gin; and Pooja Paul for being relentlessly cheerful and supportive during the difficult phase. I am also grateful to Sasha Nikolaev, Beste Kamali, Hazel Pearson, Julie Jiang, Süleyman Ulutaş, Jacopo Romoli, Clemens Mayr, Dennis Ott, Greg Scontras, Andreea Nicolae, Ahmad Al-Jallad, Louis Liu, Emma Shoucair, Lauren Eby Clemens, Caitlin Keenan, Yimei Xiang, Edwin Tsai, Yoko Yamazaki, Marek Majer, Moreno Mitrović, Chrissy Zlogar, Yujing Huang, Laurence B-Violette, Dorothy Ahn, Gašper Beguš, Lena Borise, Tyler Lau, and Navid Dianati, all of whom have contributed to making graduate life at Harvard truly enjoyable.

I also want to thank Gretchen Kern and Sam Zukoff at MIT, as well as alumni Pritty Patel-Grosz and Patrick Grosz (who throw the best parties). At the UCLA program in Indo-European studies, I am very indebted to Craig Melchert and Stephanie Jamison, and to the students of the program, in particular Dieter Gunkel, Bernhard Koller, and Mattyas Huggard.

Throughout this time, my friends in Vienna have supported and encouraged me, braving the distance with the help of mail, e-mail, skype, facebook, dropbox, whatsapp, and whatever other means necessary to make sure that I was never alone. Thank you, Tine Bazalka, Manuela Hogl, Patricia Richter, Stella Graschopf, Tyma Kraitt, Matthias Wenigwieser, Philipp Probst, Bernhard Jungert, and Igor Grintsevitch for all the fun we had and all the fun we're going to have!

More than to anybody else, I am grateful to my colleague and partner Hannes Fellner for his constant intellectual and emotional support, his patience during the difficult times, and his fierce and uncompromising love. I also want to thank his family for welcoming me so warmly and generously.

Finally, I wish to thank my family for always being there for me and looking after me, and for sending me Packerlsuppen, Oberlaa-chocolate, and Tempo-Taschentücher when things got dire. I am so grateful to my parents Wolfgang and Ellen, my grandmothers Gertraud Grestenberger and Anna Löffko, and especially my beloved sisters Livia and Cora. Because I missed so much of their lives in the past five years, this dissertation is for them.

To my family

Abbreviations

abl	ablative
acc	accusative
act	active
adv	adverb
Aesch.	Aeschylus
Alb.	Albanian
aor	aorist
appl	applicative
Arm.	Armenian
asp	aspect
aux	auxiliary
AV	Atharvaveda
Av.	Avestan
caus	causative
cl	clitic
CLuv.	Cuneiform Luvian
dat	dative
dem	demonstrative
du	dual
emph	emphatic (particle)
Engl.	English
Enn.	Ennius
Eur.	Euripides
exp	experiencer
f	feminine
Fal.	Faliscan
fut	future
gen	genitive
Goth.	Gothic
Hdt.	Herodotus
Hippon.	Hipponax
Hitt.	Hittite
Hom.	Homer
Hsch.	Hesychius
IE	Indo-European
IIr.	Indo-Iranian
Il.	Iliad
indef	indefinite
inf	infinitive
inj	injunctive
instr	instrumental
int	intensive
ipf	imperfect
ipfv	imperfective

ipv	imperative
itr	intransitive
KS	Kāṭhakasaṃhitā
Lat.	Latin
Lith.	Lithuanian
Liv.Andr.	Livius Andronicus
loc	locative
Luv.	Luvian
Lyc.	Lycian
m	masculine
MG	Modern Greek
mid	middle
MS	Maitrāyaṇīyasaṃhitā
Myc.	Mycenaean
n	neuter
Naev.	Naevius
neg	negation
nmlz	nominalizer
nom	nominative
nonact	non-active
OAv.	Old Avestan
OCS	Old Church Slavonic
Od.	Odyssey
OE	Old English
OHG	Old High German
OIr.	Old Irish
OLat.	Old Latin
OP	Old Persian
opt	optative
Osc.	Oscan
Pacuv.	Pacuvius
Pal.	Palaic
part	particle
pass	passive
perf	perfect
pfv	perfective
PIE	Proto-Indo-European
pl	plural
Plaut.	Plautus
pluperf	pluperfect
poss	possessive
pres	present
pret	preterite
pron	pronoun
prvb	preverb
ptcp	participle
quot	quotative
refl	reflexive
rel	relative
RV	Rigveda
sg	singular
smpl	simple
Soph.	Sophocles
stat	stative
subj	subjunctive
Toch.	Tocharian
tr	transitive

ts	thematic suffix
Up.	Upanishads
V	Videvdad
vb	verbalizer
Ved.	Vedic
voc	vocative
VS	Vājasaneyisaṃhitā
Y	Yasna
YAv.	Young Avestan
Yt	Yašt
YV	Yajurveda

Chapter 1

Deponents as "feature mismatch" verbs

1.1 Introduction

The term "deponents"' is traditionally applied to verbs that take non-active (middle or passive) morphology, but are semantically and syntactically active (Lat. *dē-pōnere* 'lay aside', sc. the verb's passive meaning[1]) in languages which morphologically distinguish (at least) between an active and a non-active voice. The phenomenon is best known from Latin and Greek, but other languages with similar voice systems also have deponent verbs. In modern treatments of deponents, these verbs are often described as instantiating a "feature mismatch" because their surface non-active morphology does not seem to "match" their syntactic behavior (cp. the use of the term "mismatch" in the papers in Baerman et al. 2007). These verbs are puzzling because they challenge our understanding of the function of voice morphology in general. If non-active morphology can be apparently arbitrarily assigned to verbs that do not have the "right" syntax or semantics, then what governs its distribution? The intuition that deponents display the "wrong" (namely non-active) morphology in the syntactic environments they occur

[1]For a detailed discussion of the history of the term see Flobert (1975).

in presupposes that there are *canonical* contexts in which we expect this morphology, and that deponents do not form a subset of these canonical contexts—they are instances of non-canonical use of non-active morphology.

I argue in this thesis that in addition to being interesting from a diachronic point of view, voice mismatches can also help us understand the synchronic distribution of non-active morphology and its derivation in languages with a particular kind of morphological voice distinction.

The term "deponents" is usually used for both intransitive and transitive verbs. This study focuses on transitive deponents in older Indo-European languages. I concentrate on transitive deponents because this is where we find instances of "feature mismatch", or non-canonical use of non-active voice, whereas all intransitive deponents can be explained as instances of the canonical use of non-active voice. I argue for this in more detail in Chapter 2, based on Alexiadou and Doron (2012).

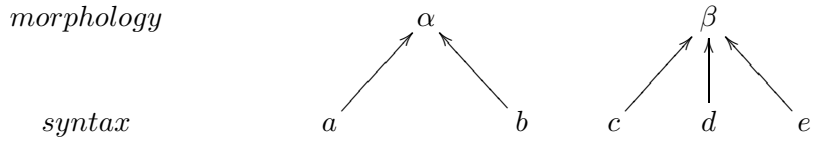
Concerning the choice of languages under study here, there are several reasons why ancient Indo-European languages such as Latin, Sanskrit, or Ancient Greek should be the centerpiece of a study of deponency. First, although these are non-informant languages, they are attested in large and easily accessible corpora that can be expected to provide data for the different syntactic environments and diagnostics that will be relevant, and they display patterns that are not usually discussed in the contemporary literature on deponents. Second, the voice systems of these languages are well studied and deponency is robustly attested. Third, these languages can provide valuable information about the diachrony of deponents due to the time span of their attestation—in the case of Greek, for example, it is possible to track the development and syntactic behavior of deponent verbs over a course of almost 3,000 years. This makes them valuable sources for testing different theoretical approaches to deponency. Furthermore, from the point of view of comparative reconstruction, studying deponents in early Indo-European languages may lead to new insights for the reconstruction of the Proto-Indo-European (PIE) verbal system as well. The question of the "original" function and morphology of the middle voice in PIE has been intensely debated by Indo-Europeanists, as

has the question of whether or not PIE had a separate voice category "stative" besides active and middle (e.g., Jasanoff 1978, Rix 1988, Oettinger 1992, Jasanoff 2003, Meiser 2009). I argue in this thesis that there is no need to reconstruct a distinct morphological category "stative" and that the "functions" associated with that category in the previous literature fall under the canonical functions that are cross-linguistically associated with middle morphology. Furthermore, Proto-Indo-European, like many other languages with a bivalent voice system, also had instances of non-canonical use of middle morphology (that is, deponents).

1.2 Background and terminology

In order to clearly delimit the object of study, namely "mismatch" verbs, it is important to be clear on terminology, since the term "middle" is often used not only to designate a particular type of verbal morphology in a given language, but also for certain syntactic constructions or "situation types" (as in Kemmer 1993). That is, it is used both for certain syntactic contexts or functions and for the morphology associated with those functions. To make this more explicit, consider the following figure. The bottom line lists the syntactic contexts a, b, c, d, and e, the top line the morphological exponents available in a given language, α and β.[2] In a bivalent voice system, α would correspond to active morphology and β to non-active morphology. The term "middle" could in principle be used to refer to a subset of either of the two tiers—that is, a subset of syntactic contexts, say, c and d, or one of the morphological exponents, like β.

Fig. 1 Syntactic context/morphological exponence



[2]I use "morphology" in this and the following figure to stand for Vocabulary Insertion at Spell-Out, as in Distributed Morphology, *not* in the sense of a separate "module" of grammar.

A lot of confusion arises from the use of the term "middle" for both tiers, that is, both for syntactic contexts and morphological exponence. For instance, the following examples from English are usually referred to as "middle constructions" (see Keyser and Roeper 1984, Arce-Arenales et al. 1994, Stroik 1999, Alexiadou 2012):

(1) a. These toys assemble rapidly.

b. Bureaucrats bribe easily.

c. I'd say bottles would sneak in easier than travel mugs.[3]

Descriptively, the internal argument of these predicates occupies the surface subject position, reminiscent of unaccusatives and passives. Unlike the latter, however, they cannot occur with an agentive *by*-phrase:

(2) Bureaucrats bribe easily (*by Mary).

This construction is called "middle" because it shares features with both active (verbal morphology, i.e., no passive participle) and passive (demotion of the external argument) clauses,[4] and because it corresponds to the so-called generic or dispositional reading that verbs with non-active morphology in languages like Modern Greek can have:

---

[3]I owe this beautiful example to Gretchen Kern.

[4]The intuition that the middle is somehow a category between the active and the passive voice, sharing features of both is in fact why Ancient Greek and Latin grammarians coined the term. Thus Dionysius Thrax in his *Tékhnē grammatikḗ* ("Art of grammar", 2nd century BCE): *diathéseis eisì treîs, enérgeia, páthos, mesótēs (...) mesótēs dè hē̄ potè mèn enérgeian potè dè páthos paristãsa* "There are three voices, active (*enérgeia*, 'activity), passive (*páthos*, 'experience; state'), and middle (*mesótēs*, 'central/middle position') ... the middle is sometimes closer to the active, sometimes to the passive." (see Flobert 1975: 6f.). Note that Dionysius Thrax was aware that these "functions" could correspond to different surface morphology: his example of a passive is the formally middle/non-active present *túptomai* 'am (being) beaten' (Greek does not have a morphological distinction between a present middle and a present passive), but his example of a middle includes the likewise formally middle aorists *epoiēsámēn* 'I considered' and *egrapsámēn* 'I wrote (for myself)' (and Greek does have morphologically distinct middle and passive aorist formations).

The term *mesótēs* was translated as *medium* by Latin grammarians, but was not usually used in the description of the Latin voice system, which was described as active—passive: *genera uerbōrum sīue significātiōnēs sunt principālēs duo, āctīua et passīua. Ex hīs nāscuntur aliae, neutra commūnis dēpōnēns* "There are two basic verbal voices or meanings, active and passive. From these, others have now developed, (namely) neuter, common, and deponent (verbs)." (Diomedes Grammaticus, 4th century CE, see Flobert 1975: 14). The last three terms (neuter, common, deponent) were created in an attempt to describe the behavior of verbs that did not show a morphological alternation between the "basic" voices active and passive in Latin.

(3) Modern Greek (from Alexiadou and Doron 2012: 16):

afto to vivlio diavazete efkola
this the book reads.NONACT easily

"This book reads easily"

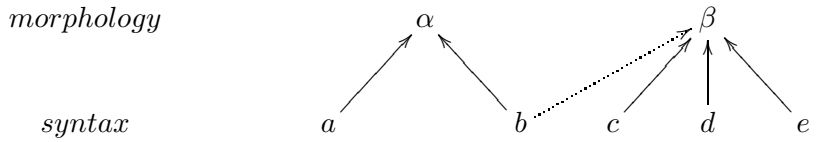
In other words, the name of the English "middle construction" derives from the fact that the same construction in languages like Greek is associated with a particular type of morphology. But this morphology is found in many other contexts as well (e.g., reflexives and anticausatives), and it is not clear that these form a natural class with the "middle construction" in a language like English. For this reason, I use the term "middle" only to refer to a type of morphological exponence, and not to the syntactic or semantic properties of the verbs that take this kind of morphology. This is important, since middle morphology is found on a variety of different verb classes (see Chapter 2).

The term "middle" is exclusively reserved for verbs marked by middle morphology in languages with an active–middle or active–middle–passive voice distinction and is used here synonymously with the term *medium*. The term "non-active" is likewise used for verbs marked by middle morphology in languages with a bivalent voice system (in other words, I use "middle" and "non-active" synonymously for bivalent voice systems).

Moreover, much of the literature on the middle is dedicated to finding the common semantic or syntactic denominator of the functions this morphology is associated with. That is, the focus is on the bottom tier of figure 1 above.

In this study I deviate from this tradition in that my primary concern is not the relationship between a, b, and α or c, d, e, and β, but those instances in which the "canonical" association between the two tiers seemingly breaks down. Concretely, these are cases in which a particular syntactic context of the syntax tier seems to be associated with the "wrong" exponent on the morphology tier. I illustrate this in figure 2.

Fig. 2 Syntax-morphology mismatch



Here, some members of the syntactic context b, which is usually associated with the morphological exponent α, are unexpectedly associated with the exponent β. These are "mismatches" between the canonical mapping of syntactic context to morphology, and the primary focus of this thesis.

In order to understand when this mapping goes wrong, it is of course necessary to know what happens in the canonical cases, when a and b are mapped to α and c, d, and e are mapped to β. This is discussed in Chapter 2.

I will not discuss languages like English in which there is no distinction in morphological exponence between "active" and "middle" constructions, since the "mismatch" situation illustrated in figure 2 never arises in such languages. That is, English-type languages do not have deponents (I discuss the reasons for this in Section 5.3).

Finally, I use a more constrained definition of deponency than that which is usually used, namely that deponents are transitive or intransitive verbs which only take non-active morphology. I argue in Chapter 2 (based on Alexiadou and Doron 2012) that this definition misses important generalizations concerning the canonical function of non-active voice. I propose my own definition of deponency in Section 2.4, where I argue that only verbs that are agentive and transitive but take non-active endings should be considered instances of feature mismatch, and hence deponents.

1.3 Texts and methods

Before discussing deponency in the older Indo-European languages, there is an important methodological point to be made. Because some of these languages are attested over quite a long time span, it is important to be aware of different diachronic stages of each language

and concomitant changes in their verbal systems, as well as individual lexical changes. That is, a given verb may be a deponent in stage A of a language, but switch to active morphology in stage B. This is often the case in Hittite, where deponents almost completely switch to active morphology between Old Hittite and Neo-Hittite, even though the time span here is relatively small (ca. 400 years). On the other hand, a given verb may be deponent in one particular dialect of a language, but active in another. For instance, in the Ionic dialect of Ancient Greek, many verbs that are morphologically active in other dialects take middle morphology (Bechtel 1924: 246ff.), like the verb *déomai* 'want, need', which is usually active in Attic (*déō*). In order to give an accurate descriptive account of the distribution and the paradigms of deponent verbs in Indo-European, I therefore concentrate on particular corpora from which I draw the examples discussed here. This ensures a certain degree of temporal and dialectal homogeneity. Deviations from these corpora will be specially indicated.

The importance of philological accuracy when using data from non-informant languages in contemporary syntactic theory cannot be overstated. To give an example, Lavidas and Papangeli (2007) list the verb *biázomai* 'I force' in their table of Ancient Greek middle transitive deponents (p. 101). However, this verb is also attested as formally active already in Homer (albeit only once), and the Homeric middle forms are moreover used both as deponents (i.e., they are syntactically active) and as regular passives. Since a passive interpretation of formally middle verbs is entirely expected in Ancient Greek, treating this form as synchronic deponent is problematic under the standard definition of deponency. Other verbs, like *mákhomai* 'fight', *hépomai* 'follow', and *khráomai* 'use' which are listed in the same category do not usually take accusative objects (*hépomai* and *mákhomai* take dative objects, *khráomai* takes genitive or dative objects), but are included in their list despite their own definition of transitive deponents as accusative-taking verbs (p. 99). These few examples should suffice to show that generalizations about the behavior of deponent verbs in these languages are likely to be skewed if they are not based on a philologically "clean" and clearly defined corpus. Heuristically, this preliminary philological work has the same status as fieldwork on an understudied language, the testing of native speaker intuitions on island violations, or an eye-tracking ex-

periment on the interpretation of adjectives in different contexts, albeit with the big caveat that ungrammatical data is usually not available. That is, it is one of several methods that can be used to construct linguistic data sets, and this is how I use it in this thesis.

Furthermore, even though the goal of this study is not to give a philologically complete description of deponent verbs in these languages, focusing on particular linguistic corpora means that a descriptively complete discussion of a particular pattern is at least in principle possible. This will become relevant in Chapter 4, where I discuss the behavior of deponents with respect to particular tense-aspect stems.

For Sanskrit, I focus on Vedic Sanskrit (ca. 1,500-500 BCE, followed by Classical Sanskrit), and I concentrate on the Rigveda as the primary source of data because of its (relative) chronological and dialectal homogeneity, occasionally supplemented by other Vedic texts. I use the metrically restored edition by van Nooten and Holland (1994). Further sources for deponent verbs in Vedic include handbooks and dictionaries such as Whitney (1885), Grassmann (1996), VIA I, as well as studies on subcomponents of the Vedic verbal system such as Gonda (1951), Gonda (1979) and Kümmel (1996).

In the case of Greek, I concentrate on the Homeric epic poems (8^{th} century BCE), using the edition of West (1998-2000) for the Iliad and that of van Thiel (1991) for the Odyssey. Relevant sources on the Ancient Greek verb include Schwyzer (1939-71), Chantraine (1953-8), Risch (1974), and van de Laar (2000).

For Latin, I focus on the work of Plautus (late 3^{rd}/early 2^{nd} century BCE). Latin is the only one of these languages for which a designated study on deponents exists, that of Flobert (1975). An important online source for both Greek and Latin are the online corpora and dictionaries of the Perseus Digital Library at Tufts University (http://www.perseus.tufts.edu). Other relevant sources for Latin are Draeger (1878), Baldi (1977), Leumann (1977), and Weiss (2009).

For Hittite, I concentrate on Old Hittite. Important editions of Old Hittite texts include Hoffner (1997), Neu (1980), and in general the editions of the StBoT-series. Other relevant sources for Hittite are the *Chicago Hittite Dictionary* (CHD), Kloekhorst (2008), and Hoffner

and Melchert (2008).

Since Modern Greek has the same type of voice system as these languages, I will rely on it for comparison and to test properties of deponents that cannot be tested in the older Indo-European languages (for obvious reasons). Furthermore, material from other Indo-European languages such as Avestan, Old Irish, Tocharian, and Modern Albanian will be discussed.

1.4 Overview: Properties of deponent verbs

The Indo-European languages under discussion have essentially bivalent voice systems, in which a synthetic active voice is opposed to a synthetic non-active voice. This opposition is usually labeled "active–middle" in Vedic, Avestan, and Greek, "active–passive" in Latin, and "active–mediopassive" in Hittite. To avoid confusion, I use the cover term "non-active" for what is variously called middle, mediopassive, and passive morphology in these languages. Independently of the term used, non-active voice tends to have the same functions in these bivalent voice systems (see Chapter 2).

Finite deponent verbs always take non-active morphology. Some old Indo-European languages show signs of an emergent trivalent voice system, in which a morphologically distinct passive is opposed to the older active and non-active/middle voice. This is incipient in Vedic and Greek at the stages under discussion. However, in both languages, distinct passive morphology is only available for certain tense-aspect stems. Finite deponent verbs in these languages usually take middle (as opposed to passive) morphology. They can also take passive morphology in some cases, with different results depending on the language (see Section 5.1). Interestingly, there are no cases in which deponents in trivalent voice systems exclusively take passive rather than middle morphology.

With respect to their syntactic behavior, transitive deponents in Indo-European behave like transitive verbs with active morphology. They have nominative subjects and accusative objects. The following passages exemplify this for Latin, Ancient Greek, Vedic Sanskrit, and

Hittite[5]:

(4) Latin, Plautus, *Mercator* 695–697:

sed **coquos**, quasi in mari solet hortator **remiges**
but cooks.ACC.PL like in sea.ABL be.wont.to.3SG.PRES inciter.NOM rowers.ACC.PL
hortarier, ita **hortabatur**
incite.INF.PASS so incite.3SG.IPF.PASS

"But just like at sea a rowing-master (lit. 'inciter') is wont to urge the rowers, so he urged the cooks"

Both verbal forms of the deponent verb *hortor* 'incite, urge, encourage' in this passage take an accusative object and behave like a normal active transitive verb: the clauses *coquos ... hortabatur* "he urged the cooks" and *remiges hortarier* "to urge the rowers" have the same active and transitive syntax as the formally active and semantically quite similar verbs *instigō* 'incite', or *moneō* 'admonish, advise' as used by the same author:

(5) Plautus, *Miles gloriosus* 573:

Bene **me** **mones**, ...
well me.ACC advise.2SG.ACT

"You advise me well, ..."

It is worth stressing that the forms of *hortor* in (4) cannot be interpreted as syntactically passive, as is clear from the passage, and they cannot easily be explained in terms of the functions usually ascribed to the middle voice, either (i.e., self-benefactive, reflexive, intransitive, etc., see Chapter 2 on the canonical functions of the middle voice). Both (4) and (5) are active and agentive.

The same holds for Ancient Greek. In the Homeric example in (6), the deponent *tínumai*

[5]Citation forms are the verbal root (or stem) for Sanskrit, the 1sg. for Ancient Greek and Latin, and the 3sg. for Hittite.

'punish, take revenge on' takes an accusative object.[6]

(6) Homer, *Iliad*, 3.278-9:

kaì hoì hupenérthe kamóntas **anthrṓpous**
and who.NOM.PL beneath passed.on.PTCP.ACC.PL men.ACC
tínusthon
punish.2DU.PRES.MID.

"and (you) who in the underworld punish the men who have passed on"

Despite its middle morphology, *tínumai* has exactly the same properties as a comparable morphologically active verb: it is agentive and has an accusative object.

In Vedic, the root *trā* 'protect' is a deponent root: All its verbal forms take the middle endings, but it behaves like an active transitive verb.

(7) RV 2.23.4a-b:

trā́ya-**se** jánaṃ yás túbhyaṃ dā́śāt
protect-**2SG.PRES.MID** man.ACC who.NOM you.DAT worship.3SG.SUBJ.ACT

"You protect the man who worships you"

The final example is the Hittite deponent *paḫša(ri)* 'protects', which is agentive and takes accusative objects:

(8) Hittite, KBo 8.35 ii 14-15:

nu mān kūš **lingāuš** **paḫḫašduma** **šumāš**=a
PART if these.ACC.PL oaths.ACC.PL protect.2PL.PRES.MID you.ACC.PL=PART
DINGIR.MEŠ-eš **paḫšandaru**
gods.PL-PL protect.3PL.IPV.MID

'If you protect these oaths, let the gods likewise protect you!'

In all four passages, verbs with non-active morphology have distinctly active properties. The

[6]For Ancient Greek, I use the following transcription throughout: ζ = <z>, η = <ē>, θ = <th>, ξ = x, υ = <u>, φ = <ph>, χ = <kh>, ψ = <ps>, ω = <ō>, η̃ = <ê>, ω̃ = <ô>.

same phenomenon is also found in modern languages like Modern Greek (MG), which has a number of deponent verbs, such as *metahirizome* 'use', *psiliazome* 'suspect', *ekmistirevome* 'confide in', etc. (see, e.g., Manney 2000, Papangeli and Lavidas 2009, Alexiadou and Doron 2012, Zombolou and Alexiadou 2014).

However, there is also plenty of language-specific variation in the syntactic and morphological behavior of transitive deponents. For example, while Latin deponents descriptively use both morphologically active and passive participles (the former in the present, the latter in the perfect), Sanskrit deponents exclusively use the middle participial suffix *-(m)ānа-*, and never the active one. Latin and Modern Greek deponents cannot be passivized, but Sanskrit ones can. A general account of transitive deponents must therefore leave room for parametric variation with respect to the interaction between voice, finiteness, and argument structure.

The examples discussed in this section can be classified as deponents in the broad sense of the term.

(9) Definition of deponency (broad)
"In an active—non-active voice system, a deponent is syntactically active and transitive, but takes non-active morphology."

The term "deponent" is usually used in this sense in the literature, but note that it does not refer to the status of the nominal arguments of deponents. I argue in Section 2.4 for a refined definition of deponency that does make reference to the nominal arguments of deponents.

1.5 Deponency in non-Indo-European languages

Deponency in the broad sense defined above is not restricted to Indo-European, but occurs in a variety of languages with the same general voice system type in which a single morphological exponent is found across different syntactic contexts ("voice syncretism", Embick 2004a). In Dravidian, for example, the marker *-koḷ-* (Tamil, Kannada) or *-kon-* (Telugu) appears on verbs in a variety of different syntactic environments, chiefly reflexives, but also reciprocals, anticausatives, self-benefactives, and experiencer verbs (see, e.g., Sundaresan 2012: 101ff. on

Tamil, Lidz 2001 on Kannada). While the *kol*-marked verbs in these classes alternate with verbs without the marker, there are also verbs that obligatorily take *-kol-* and are ungrammatical without it. Some of these verbs are transitive, cp. the following example from Kannada (from Sundaresan 2012: 117, fn. 7):

(10) Ramaa Krishnan-annu tabbi-ko-ɳɖ-aa/*tabb-id-aa
Rama.NOM Krishnan-ACC hug-kol-PST-3MSG/*hug-PST-3MSG
"Rama hugged Krishnan."

Such cases at least descriptively fit the broad definition of deponency given at the end of the last section.

Another example comes from Sora, a Munda language spoken in India. As described in Stump 2007, Sora distinguishes morphologically between reflexive and non-reflexive uses of verbs in a way that is reminiscent of the Sanskrit use of active vs. middle forms for these functions. To create a reflexive/self-benefactive form from an active verb such as *kuŋ-t-ay* 'I shave (somebody else)', a morpheme *-n-* is added, giving *kuŋ-te-n-ay* 'I shave myself'. Sora also has a class of verbs that always uses the reflexivizing morpheme, but whose semantics are not reflexive. Not all of these verbs are transitive, but some of them are. Stump cites *ber* 'speak', *ña* 'walk', *der* 'believe', and *daku* 'stay' as examples of verbs that are always morphologically, but not semantically reflexive.

A structurally similar phenomenon is found in Cree (Algonquian).[7] Cree distinguishes between four verb classes: intransitives with an inanimate subject (II), intransitive with an animate subject (AI), transitive with an inanimate object (TI), and transitive with an animate object (TA). There is a subclass of verbs that are syntactically transitive and can take both animate and inanimate objects, but nevertheless stay in the AI inflectional class, thus patterning as deponents. The following two clauses are transitive and should alternate between TI and TA marking. Instead, the verb *me:ki-* stays in the AI form (from Wolfart 1996: 403, cited after http://www.smg.surrey.ac.uk/Deponency/WALS/Cree.htm).

[7] From: Surrey Deponency Databases, http://www.smg.surrey.ac.uk/Deponency/Deponency_home.htm.

(11) a. mi:na pa:kisikan me:ki-w
also gun.INAN give.out.AI-3SG.PROX
"He also gave out a gun"

b. ta:pwe: me:ki-w pe:yak misatimwa:
truly give.out.AI-3SG.PROX one horse.AN
"Truly he gave out one horse"

Kemmer (1993) furthermore cites examples of deponency from Turkish (Altaic), Kanuri (Nilo-Saharan), Guugu Yimithirr (Pama-Nyungan), Mohave (Yuman), and Fula (Niger-Congo). Fula distinguishes between active, middle, and passive voice and has both *activa tantum* and *media tantum*. Among the latter, we also find transitive deponents that have the same external syntax as the examples from the Indo-European languages given above (the following is taken from Klaiman 1991: 64):

(12) Fula:

'o ɗon-yerd-ii mo
he NONPUNCTUAL-trust-STAT.MID him.DAT/ACC

'He trusts him'

Deponency is usually discussed in the context of languages with nominative-accusative alignment, and the status of the reported voice mismatch cases in ergative/absolutive languages is somewhat unclear. For example, one possible case has been reported from Chukchi (Chukotko-Kamchatkan). Chukchi distinguishes between an active and an antipassive voice. The antipassive morphemes *-ine-* and *-tku-* demote the logical object, resulting in intransitive clauses in which the subject takes absolutive marking and the demoted object takes oblique case marking. Crucially, there is no ergative-marked DP in a regular antipassive clause. However, in the so-called "spurious antipassive" (SAP), the antipassive marker co-occurs with the ERG-ABS marking found in regular transitive clauses, a situation that could be described as voice mismatch. The following examples, taken from Bobaljik (2007: 178f.), illustrate a regular antipassive (13) and a SAP construction (14).

(13) Chukchi antipassive:

ʔaaček-ət Ø-**ine**-nɬʔetet-ɣʔet kimitʔ-e
youth-PL(ABS) 3SG.SUBJ(I)-**AP**-carry-3PL.SUBJ(I) load-INSTR

"(The) young men carried away a load"

(14) Chukchi SAP:

ə-nan ɣəm Ø-**ine**-ɬʔu-ɣʔi
he-ERG I(ABS) 3SG.SUBJ(I)-**AP**-see-3SG.SUBJ(I)

"He saw me"

Note that while the DP case alignment is ERG-ABS, there is no object agreement on the verb. Bobaljik (2007) argues that this mismatch pattern arises from the interaction of independently needed mechanisms in Chukchi that govern the distribution of case and agreement morphology and is therefore not directly relatable to deponency in languages like Latin. However, it seems that ERG-ABS languages have voice mismatch phenomena that at least fit the the broad definition of deponency, but probably do not constitute a natural class with them (Bobaljik 2007: 197).

With a question mark over the ERG-ABS-languages, this cross-linguistic overview suggests that voice mismatches, that is, non-canonical use of non-active morphology, is a universal property of certain types of voice systems. While non-canonical use makes up only a small percentage of the use of middle morphology in any given language (see Section 2.4 below), it is nevertheless a puzzling cross-linguistic constant in need of explanation. Before going deeper into the discussion of the problems posed by these verbs, it is therefore necessary to discuss the distribution of non-active voice in general. This will be undertaken in Chapter 2.

1.6 Outline of this thesis

This brief overview should suffice to show that the deponency is a puzzling feature of a certain type of voice system (synthetic active vs. non-active) with potential ramifications for our understanding of the syntax/morphology interface. The main issue to be resolved

in order to develop an analysis of deponent behavior is whether transitive deponents are indeed an instance of "feature mismatch" or whether they can be explained in terms of the canonical functions of non-active voice in the languages in which they occur. This raises several questions:

- What is the canonical function of non-active voice in the languages under discussion? Does non-active voice reduce valency, and if yes, why does it ostensibly fail in the case of deponents? These questions are addressed in Chapter 2, where the canonical function of the middle voice is discussed.

- Are deponents instances of non-canonical use of the middle voice? The answer to this question will depend on the status of the surface subject of deponents. If, as has been argued recently by Kallulli (2013) and Zombolou and Alexiadou (2014), the subjects of deponents are experiencers or benefactive arguments, they may not need to be analyzed as mismatch verbs at all. On the other hand, if the surface subject is an agent, we are dealing with a voice mismatch, since non-active voice assignment depends on not having an agentive subject DP. I argue for this analysis of non-active morphology in Chapter 2. In Section 4.2 I provide arguments in favor of analyzing deponents as transitive agentive verbs (as Embick 1998 does for Modern Greek) rather than as experiencer verbs.

- How does deponency interact with or depend on finiteness? Papangeli and Lavidas (2009) argue that both in Latin and in Modern Greek deponents pattern morphologically with active transitive verbs in their non-finite forms (i.e., the Latin deponent *sequ-or* 'follow' has a formally active participle *sequē-ns* 'following'). Does this hold for other languages as well, and if yes, why should voice morphology depend on the presence or absence of a finite +TENSE feature? I discuss the synchronic behavior of non-finite formations of deponent verbs in Chapter 3 and argue in Section 4.3 that deponent behavior depends on the availability of a functional projection v in combination with a particular functional head relating to verbalizing morphology (and possibly thematic aspect) rather than on finiteness.

- How does deponency interact with tense, aspect, and mood (TAM) and what causes semi-deponency? I discuss this issue in Chapter 4, where I argue that deponency is *always* dependent on the interaction of "low" verbal projections (V, v), which may vary across languages.

The general structure of this thesis is as follows. In Chapter 2, I compare the cross-linguistic uses of non-active morphology and argue for a unified account of the syntactic derivation of non-active morphology. An important part of this discussion is the question of what it means to be a "canonical middle" (Sections 2.2 and 2.3) vs. what it means to be a "non-canonical middle", or deponent (Section 2.4). In Chapter 3 I give a descriptive and comparative account of the voice systems of Vedic, Avestan, Ancient Greek, Hittite, Latin, and Modern Greek and the properties of their deponent verbs. This serves as the background for the theoretical discussion of "mismatch verbs" in Chapter 4. In this chapter, I review previous approaches to deponency and argue that deponents are agentive, that is, they are indeed instances of "feature mismatch" and do not instantiate any of the canonical uses of middle morphology. I then present my own analysis of deponents, arguing that their external arguments are introduced in a different syntactic position than those of canonical active verbs. I build on the approach of Embick (1997), (1998), and (2004a), in which active morphology depends on the presence of an external argument in the right syntactic environment (namely the specifier of vP). Because the external argument of deponent verbs is introduced in a different location, we end up with the surface "mismatch" between active syntax and non-active morphology.

In Chapter 5, I discuss the consequences of this analysis, in particular how this general framework extends to deriving *activa tantum* (verbs that only occur with active morphology), and how it relates to the question of "voice co-occurrence" in Vedic and Greek. I moreover show that this analysis can predict whether or not mismatch behavior is continued in non-finite formations to deponent verbs, and that it offers a relatively simple explanation for why certain languages (e.g., English, French, German, etc.) do not have deponents (under the definition of deponency that I use).

Chapter 6 discusses the diachrony of Indo-European deponents and its consequences for the reconstruction of the morphology and uses of the Proto-Indo-European middle. Chapter 7 is a general summary and conclusion. The Appendix contains an exhaustive list of the deponents that occur in the corpora of the non-informant Indo-European languages under study, as defined in Section 1.3, including a discussion of their synchronic properties and diachrony where this is relevant.

Chapter 2

Deriving canonical middle verbs

2.1 Introduction

Before determining what it means to be a "non-canonical" middle (that is, a deponent), we need to be clear about the canonical uses of middle morphology and the mechanisms by which it is assigned. As I mentioned in the general Introduction, both native speakers of bivalent voice system languages like Modern Greek and Albanian and the linguists working on these languages have intuitions concerning the contexts in which non-active morphology is grammatical (or expected) and in which it is not. We can characterize these contexts *a priori* as "canonical" uses of non-active morphology. While deponents do not correspond to any of the canonical uses of non-active morphology (intuitively, but this is theoretically motivated in Section 2.4), they are nevertheless grammatical and part of the grammar of the speakers of these languages.

The aim of this chapter is to clarify which contexts should be considered canonical for non-active morphology and to establish a descriptive generalization concerning these contexts. While other approaches use notions like subject affectedness or valency reduction/argument demotion to generalize over the contexts in which non-active/middle morphology occurs, I argue that the right generalization concerns the status of the surface subject in these contexts: the subject is never an agent. I motivate this in Sections 2.4 and 4.2 and provide arguments

against previous approaches in Sections 2.5-2.6 and 4.1.

2.2 The canonical functions of non-active morphology

In this section, I provide a descriptive overview over the distribution of non-active/middle morphology.

As recognized widely in the literature (e.g. Klaiman 1991, Kemmer 1993, 1994, Embick 1998, Kaufmann 2007, Alexiadou and Doron 2012, etc.), non-active voice morphology tends to have the same set of functions cross-linguistically in languages that have an active–non-active voice opposition. However, the literature is far from unanimous on how to classify these functions. As a first approximation, I will distinguish between *oppositional* and *non-oppositional* uses of middle morphology.

Descriptively, oppositional middles are opposed to (often transitive) active constructions in a predictable manner. That is, speakers (and linguists) have the intuition that these verbs alternate between active and non-active morphology, and that each member of the alternation has a predictable syntax and meaning.[1]

The following functions can be considered *a priori* canonical oppositional uses of non-active morphology based on the comparative typology of active—non-active languages, this will be further motivated in Section 2.6. Non-oppositional uses are discussed in Section 2.3.

(1) Anticausatives/inchoatives: Verbs designating spontaneous, non-externally caused changes of state.

a. Modern Greek:

keome 'burn' (non-act., itr.) — *keo* 'burn' (act., tr.)

tsakizome 'snap, split' (non-act., itr.) — *tsakizo* 'snap, split' (act., tr.)

sikonome 'rise' (non-act., itr.) — *sikono* 'raise' (act., tr.)

[1]This intuition was shared by the grammarians of antiquity, who also distinguished between alternating and non-alternating verbs, cp. Flobert (1975: 8ff.) for Latin and the discussion of the Vedic voice system in 3.1.2 below.

b. Sanskrit:

várdhate 'grows' (mid., itr.) — *várdhati* 'grows' (act., tr.)

vártate 'turns' (mid., itr.) — *vártati* 'turns' (act., tr.)

(2) Naturally reflexive verbs, naturally reciprocal verbs.

a. Modern Greek:

plenome 'wash oneself' (non-act.) — *pleno* 'wash' (act.)

htenizome 'comb oneself' (non-act.) — *htenizo* 'comb' (act.)

b. Sanskrit:

pávate 'washes oneself' (mid.) — *punā́ti* 'washes' (mid.)

c. Classical Greek:

loúomai 'wash oneself' (mid.) — *loúō* 'wash' (act.)

(3) Self-benefactives/indirect reflexives.

a. Modern Greek:

promithevome 'get sth. for oneself' (non-act.) — *promithevo* 'supply' (act.)

b. Sanskrit:

yájate 'sacrifices sth. for one's own benefit' (mid.) — *yájati* 'sacrifices sth.' (act.)

bhárate 'takes/carries sth. for oneself' (mid.) — *bhárati* 'carries' (act.)

(4) Dispositional/generic middles (examples from Alexiadou and Doron 2012).

a. Modern Greek:

afto to vivlio diavazete efkola
this the book reads.NACT easily

"This book reads easily"

b. Hebrew:

ha-xulca lo hitgahaca
the-shirt not iron.INT.MID

"The shirt didn't iron"

(5) (Medio)passives.

a. Modern Greek:

skotonome 'be killed' (non-act.) — *skotono* 'kill' (act.)

b. Sanskrit:

stáve (mid.) 'is being praised' — *stáuti* 'praises' (act.)

This is not the only possible classification. Kemmer (1993), for instance, classifies the uses of middle morphology based on lexical-semantic considerations. However, I will argue that a classification based on the syntactic properties of these groups is superior in that it allows a unified account of what middle morphology "does" in each instance. I briefly discuss each of these functions in the next sections.

2.2.1 Anticausatives

So-called causative alternation verbs designate actions that can either occur spontaneously or be brought about by an external cause or causer, e.g., *open*, *break*, *grow*, *boil*, *freeze*, *roll*, etc. This broadly corresponds to Levin and Rappaport Hovav 1995's distinction between internally and externally caused events. Internally caused events include verbs of emission (Engl. *glitter*, *gleam*, *roar*, *burp*, etc.), externally caused events include, e.g., Engl. *break, cook, freeze, melt, dry*, etc. There is a vast typological and theoretical literature on causative alternation verbs (e.g., Levin and Rappaport Hovav 1995, Alexiadou and Anagnostopoulou 2004, Alexiadou et al. 2006, Comrie 2006, Schäfer 2009, Alexiadou 2010, Horvath and Siloni 2011, and many of the papers in Comrie and Polinsky 1993, especially Haspelmath 1993), so I will restrict myself to a brief reiteration of the facts that will be relevant to the general discussion.

Causative alternation verbs come in two versions, an intransitive anticausative/inchoative version and a transitive causative version. In languages which morphologically distinguish between active and non-active voice, the anticausative version usually takes non-active mor-

phology, while the causative version takes active morphology.[2] The following examples from Embick 1998 illustrate this (for more examples from Modern Greek see Manney 2000: 247ff.).

(6) Causative alternation verbs in MG

tsakizo — *tsakizome* 'snap'

keo — *keome* 'burn'

aplono — *aplonome* 'spread'

vithizo — *vithizome* 'sink'

anaptiso — *anaptisome* 'develop'

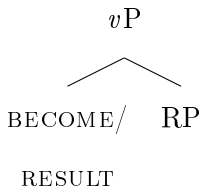
The main point of debate is whether or not the anticausative variant of these alternation verbs can be derived from the causative variant by some sort of detransitivizing operation, as argued by Levin and Rappaport Hovav (1995) and Chierchia (2004) for (externally caused) causative alternation verbs. On the other hand, Embick (1998) and Alexiadou and Anagnostopoulou (2004), among others, argue that the intransitive variant is more basic. Alexiadou and Anagnostopoulou (2004) propose that anticausatives are always embedded under a BECOME or RESULT operator. I use R(oot)P for the lexical projection that is embedded under this operator, as used in Distributed Morphology (DM, see, e.g., Halle and Marantz 1993, Harley and Noyer 1999, Harley 2005 and To appear, Embick and Noyer 2007, Embick and Marantz 2008, and Haugen and Siddiqi 2013 on roots in DM). RP is "categorically unspecified" until it merges with a functional category that turns it into a verb, noun, or adjective.[3] In the case of anticausatives/inchoatives, the verbalizing functional category adds achievement or state semantics (in the sense of Dowty 1979, van Valin 1990):

---

[2]But note that Modern Greek has a number of anticausatives that take active morphology, cp. Alexiadou and Anagnostopoulou (2004), and this also holds for other languages with a similar voice system. I discuss these in Sections 2.3.1 and 5.2.

[3]Note to Indo-Europeanists: This conception of "category-neutral" roots corresponds more or less exactly to the use of roots in the reconstruction of Proto-Indo-European, that is, all the entries in LIV^2 can be understood as roots in this sense.

(7)



In the causative variant, this structure is then merged with a functional projection that introduces a causing event and a causer external argument. Crucially, this only happens in "verbal" environments, as nominalizations of causative alternation verbs show. In these nominalizations ("derived nominals" in the sense of Chomsky 1970), only the internal, but not the external argument can surface (Chomsky 1970: 214f., Pesetsky 1995: 78f., Marantz 1997: 215f.):

(8) a. the growth of tomatoes
b. *John's growth of tomatoes

(9) a. the drop of the curtain
b. *the mechanism's/*John's drop of the curtain

(10) a. the swing of the pendulum
b. *gravity's/John's swing of the pendulum

The lack of an external argument in anticausatives is also apparent from contrasts as in (11). While the passive in (11a) must have an implicit agent that can control the infinitival adjunct, there is no such implicit agent in the anticausative in (11b), hence the sentence is ungrammatical. This has been taken as evidence for the absence of an external argument in the underlying representation of anticausatives.

(11) a. The boat was sunk [PRO to collect insurance]
b. *The boat sank [PRO to collect insurance]

To summarize, the anticausative variant of causative alternation verbs does not have an external argument, while the causative variant does. The causer argument of the latter is introduced by a functional projection specifying a causing event that is absent in the

structurally more basic anticausative variant.

2.2.2 Reflexives and reciprocals

For reflexives and reciprocals, it is important to distinguish between naturally and derived reflexive and reciprocal verbs. Naturally reflexive verbs include *wash*, *shave*, *comb*, and other "body action verbs" (cp. Kemmer 1993, Levin 1993) and predicates like *be ashamed*. Naturally reciprocal verbs include verbs that are inherently specified for more than one participant, e.g., *meet*, *fight*, *embrace*, *kiss*, etc. On the other hand, there are verbs that are not inherently reflexive or reciprocal, but can become so by means of a reflexive or reciprocal pronoun. These two classes are cross-linguistically systematically different with respect to their morphosyntax. For present purposes, only their behavior in languages with a bivalent voice system is relevant. Naturally reflexive and reciprocal verbs take non-active morphology in languages with a bivalent voice system, e.g.:

(12) a. Modern Greek: *plenome* 'wash myself', *htenizome* 'comb myself'

b. Sanskrit: *pávate* 'washes oneself', *níṁsante* 'they kiss', *spárdhante* 'they fight'

c. Classical Greek: *loúomai* 'wash myself', *mákhontai* 'they fight'

Many modern Indo-European languages, on the other hand, have a descriptively analytic construction for reflexives, reciprocals, and self-benefactives, in which a weak pronoun or anaphoric element SE (Sp., Fr. *se*, It. *si*, Dut. *zich*, Gm. *sich*, etc.) combines with a morphologically active (or morphologically underspecified) verb. This construction also occurs in other syntactic contexts which display non-active morphology in voice systems with a synthetic bivalent voice distinction (especially in self-benefactive, dispositional, and anticausative constructions). Examples of the reflexive use are given in (13).

(13) SE-reflexives

a. Italian:

lavare 'wash' — *lavarsi* 'wash oneself'

uccidere 'kill' — *uccidersi* 'kill oneself'

pettinare 'comb' — *pettinarsi* 'comb oneself'

b. French:

laver 'wash' — *se laver* 'wash oneself'

tuer 'kill' — *se tuer* 'kill oneself'

améliorer 'improve' — *s'améliorer* 'improve oneself'

c. German:

waschen 'wash' — *sich waschen* 'wash oneself'

verletzen 'injure' — *sich verletzen* 'injure oneself'

sehen 'see' — *sich sehen* 'see oneself'

Languages with this type of voice system are not the central topic of this dissertation and will only be discussed when relevant. It is interesting that analytic constructions such as (13) never seem to exhibit feature mismatch. That is, there are no analytic "deponents" of the structure AGENT + SE + verb + DP_{ACC}. All predicates that do have this structure are unambiguously self-benefactive. I will come back to this generalization in Section 5.3.

Again, the literature on reflexivity in general is long (e.g., Chomsky 1981, Reinhart and Reuland 1993, Safir 2004, Reinhart and Siloni 2005, Rooryck and Vanden Wyngaerd 2011, Reuland 2011, etc.) and cannot be exhaustively reviewed here. However, there is consensus in that it is generally recognized that non-active morphology by itself cannot reflexivize a predicate. This observation is captured by Reinhart and Reuland (1993)'s Condition B: "a reflexive predicate is reflexive-marked". Non-active morphology alone is not enough to make a predicate count as "reflexive-marked" (unless it is a "naturally reflexive" predicate). Modern Greek reflexives, for instance, always take non-active morphology in addition to the preposed reflexive marker *afto-* 'self', as in (14a). If *afto-* is missing, the interpretation can only be passive, as in (14b) (from Embick 1998).

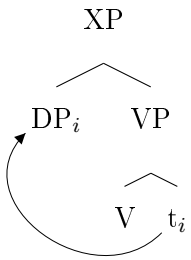
(14) a. afto-katastrafo-me
SELF-destroy-1SG.NACT
"I destroy myself"

b. O Yanis katastraf-ik-e
the Yanis destroy-PAST.NACT-3SG
'Yanis was destroyed/*destroyed himself'

This suggests that it is the *afto*-morpheme that introduces reflexivity, and not the non-active morphology. Of course, this immediately raises the question why non-active morphology is found in reflexives at all, if it does not effect any kind of syntactic alternation. This is one of the arguments that leads Embick (1998) to argue that voice morphology in Greek-type voice systems is determined *post-syntactically* and depends on a particular syntactic configuration in which A-movement of the internal arguments has taken place.

Naturally reflexive/reciprocal verbs like the ones in (10) are, at first glance, principled counterexamples to the claim that non-active morphology alone does not reflexivize, since they do not need a reflexive marker. Most theoretical accounts need special assumptions to handle this class. Embick (1998), for example, analyzes inherent reflexives as unaccusative verbs which take only an internal argument which moves to subject position, as in (15).

(15)



A more general "unaccusative analysis" of reflexive predicates is also proposed by Grimshaw (1990), Pesetsky (1995) and Sportiche (1998), who suggest a syntactic derivation of SE-reflexives in which the reflexive clitic absorbs the external argument and must be bound by the internal argument which has moved to subject position. Recent defenses of the unaccusative analysis include Charnavel et al. (2009) and Rooryck and Vanden Wyngaerd (2011).

On the other hand, an "unergative analysis" of reflexives has been proposed by, e.g., Chierchia (2004), Reinhart and Siloni (2005), and recently by Sportiche (2014). Reinhart and Siloni (2005) provide several arguments for the claim that reflexives systematically pattern with unergative rather than with unaccusative verbs. First, in French the clitic *en* can only

cliticize out of object position. (16b) illustrates this using the unaccusative verb *arriver* 'arrive', whose sole argument is the internal argument, hence *en*-cliticization is possible (all examples from Reinhart and Siloni 2005).

(16) a. Il est arrivé trois filles hier soir
There is arrived three girls yesterday evening
"There arrived three girls yesterday evening"

b. Il en$_i$ est arrivé trois t$_i$ hier soir
There of.them.CL is arrived three yesterday evening
"There arrived three of them yesterday evening"

If reflexives in French were unaccusative verbs, they should pattern with verbs like *arriver* and allow *en*-cliticization of the internal argument. However, as (17b) shows, this is ungrammatical.[4]

(17) a. ?Il s'est lavé beaucoup de touristes dans ces douches publiques
There SE+is washed many of tourists in these showers public
récemment
recently
"Many tourists washed in these public showers recently"

b. *Il s'en$_i$ est lavé beaucoup t$_i$ dans ces douches publiques
There SE+of.them.CL is washed many in these showers public
récemment
recently
Intended: "Many of them washed in these showers recently"

A second piece of evidence comes from Hebrew, in which unaccusative verbs allow an inversion structure with a postverbal subject (S V $\rightarrow$ V S), as in (18a), whereas unergatives do not, (18b). Again, reflexives pattern with unergatives in disallowing the inversion structure (18c).

(18) a. Nišbar mašehu
Broke something
"Something broke"

[4](15b) is, however, acceptable in the "middle" reading, as pointed out to me by Isabelle Charnavel.

b. *Rakdu šloša yeladim ba-mesiba
Danced three boys in-the.party

c. *Hitlabšu šaloš dugmaniyot ba-knisa
Dressed three models in-the.entrance

Finally, Reinhart and Siloni (2005) point out that reflexives, like unergatives (19a) and unlike unaccusatives (19b), allow the formation of agent nouns in English (19c), which is unexpected under an unaccusative analysis of reflexives.

(19) a. She runs so fast because she is an experienced runner

b. *She moves so gracefully because she is an experienced mover

c. She dresses slowly because she is an elegant dresser

These are just a few of the arguments against an unaccusative analysis of reflexives. The question of an unaccusative vs. unergative analysis of reflexives is relevant to the present discussion because it makes different predictions as to the status of the surface subject of reflexives. While the unergative analysis is compatible with an agentive subject in reflexives (which is also suggested by (19c)), the unaccusative analysis is not.

For the purposes of this study, I will operate with an unaccusative analysis of reflexives in Greek-type languages in which both naturally reflexives and "derived reflexives" take non-active morphology. The fact that reflexives in these languages share the same morphology with other unaccusative constructions (anticausatives, passives) is a first indicator that this is correct, but of course this assumption has to be independently motivated.

There is in fact evidence that naturally reflexive verbs in these languages pattern with unaccusatives with respect to their syntactic properties (cp., e.g., Embick 1998, Oikonomou 2014, Alexiadou and Schäfer To appear); in Modern Greek, naturally reflexive verbs behave like unaccusatives with respect to the impossibility of agent noun formation, the possibility of possessor sub-extraction, and the unavailability of a strict/"object comparison" reading under ellipsis, as in (20) (from Alexiadou and Schäfer To appear, who also discuss a number of caveats concerning these tests):

(20) O Janis plenete perisotero apo to Vasili
the John washes.NONACT more than the Vasilis
1. Sloppy interpretation: "John washes himself more than Vasilis washes himself"
2. #Strict interpretation/object comparison: # "John washes himself more than he washes Vasilis"

Note that both readings are available in reflexive constructions with the object anaphor *ton eafto tu*. Leaving aside these constructions, I assume that tests like (20) are evidence for a movement analysis of reflexives in which the internal argument raises to subject position. This also seems to be the case for *afto*-reflexives, judging from the impossibility of proxy readings (again, proxy readings are available for reflexives which use the object anaphor). The following example is taken from Oikonomou (2014): in a context in which Johnny Depp visits Mme Tussaud's, the following sentence with an *afto*-reflexive can only mean that he took a picture of himself. The proxy reading, in which he took a picture of his statue, is not possible.

(21) O Johnny afto-fotografistike.
The Johnny SELF-photograph.PAST.NONACT.3SG
"Johnny took a selfie" (-proxy) (#"Johnny took a photo of his statue" (+proxy))

The impossibility of a proxy reading as evidence for a movement analysis will also be relevant for self-benefactives (Section 2.2.5). Basically, because there is only one argument in (21), a disjoint reading is impossible, and the diagnostics mentioned above provide evidence that this sole argument must be the theme.

A longer discussion of arguments for the unaccusative analysis of reflexives would take up too much space, and Greek reflexives are extensively discussed by Oikonomou (2014), Alexiadou and Schäfer (To appear), and Spathas et al. (To appear), among others. However, I hope that this brief introduction in combination with the discussion of self-benefactives below suffices to show that there are good arguments for an unaccusative analysis of reflexives in Greek-type languages, despite the objections of Reinhart and Siloni (2005) concerning Hebrew. I must stress again that I am not making any claims about languages with anaphoric or

pronominal reflexives (French, Italian, German, etc.), some of which have structurally transitive reflexive constructions (e.g., German, see Steinbach 2002), while others have intransitive ones (e.g., Italian, French). Moreover, the intransitive ones may be unergative rather than unaccusative (cp. Sportiche 2014 for French). Since the goal of this thesis is to show how voice mismatches arise in a very specific kind of voice system, I think that it is reasonable to exclude other types of voice systems for now.

Reciprocals

While I cannot give a detailed discussion of reciprocals here (see Bruening 2004, the papers in Nedjalkov et al. 2007 and König and Gast 2008, and Oikonomou 2014), they must be mentioned because they seem to pose a problem for the analysis outlined so far. I have begun to argue that non-active marked verbs in Greek-type languages share the characteristic of not having an external argument (descriptively, their surface subject is not an agent). However, reciprocals denote complex events in which the participants are the respective agents and patients of different sub-events. In "naturally reciprocal verbs" (*meet*, *kiss*, *fight*), these sub-events occur simultaneously.

Unergative analyses of reciprocals have moreover been proposed by Bruening (2004), who posits a projection RecipVP above VP that introduces reciprocal semantics differs from the "regular" voice head in merging an argument that is both the agent and the theme (for reciprocals whose sole argument is a plural subject) and provides arguments for unergative behavior of reciprocals from Japanese and Chichewa and Reuland (2011: 211ff.) (reduction of the internal argument by the reciprocal marker). Siloni (2008) provides arguments for an unergative analysis of Hebrew reciprocals, although she notes that inherently symmetrical reciprocals like *mix* pattern with unaccusative verbs with respect to the relevant tests.

In Modern Greek and the older Indo-European languages, there is at least some evidence that reciprocals (like reflexives) only have a single argument, and that this is the internal argument. Like reflexives, anticausatives, and (medio)passives, they take non-active morphology; naturally reciprocal verbs do not need to take a designated reciprocal pronoun, as

in the following examples from Hittite and Modern Greek.

(22) a. Hittite, KBo 23.92 ii 14;

takku LÚ-$^{\text{MEŠ}}$ za͡ḫḫ-anda ta 1?-aš ak-i ...
if man-PL fight-3PL.NONACT and one-NOM die-3SG.ACT

"If men hit each other and one dies ..."

b. Modern Greek (Oikonomou 2014: 21):

Ta pedja kinigiunte
The children chase.3PL.PRES.NONACT

"The children chase each other"

Modern Greek moreover has a productive "reciprocalizing" prefix *alilo-* "each other", parallel to reflexive *afto-* 'self'. The older Indo-European languages likewise develop reciprocalizers. In Vedic, for example, the adverb *mithás* 'mutually, reciprocally, alternately' and the adjective *anyá-* 'other' (in the phrase *anyó ... (a)nyá-* 'the one ... the other; each other') are used in derived reciprocal constructions (see Jamison 1997, Kulikov 2007a and 2007b). Derived reciprocals also take non-active morphology. Reciprocals in Modern Greek moreover pattern with reflexives in disallowing a strict/object comparison reading under ellipsis (the following example was provided by Despina Oikonomou):

(23) i Ana ke i Maria alilo-ipostirizonte perisotero ap'oti i
the Ana and the Maria RECIPR-support.3PL.PRES.NONACT more than the
antres tus.
men their

1. Sloppy interpretation: "Ana and Maria support each other more than their husbands support each other."

2. #Strict interpretation: " ... than their husbands support them."

Oikonomou (2014) argues that reciprocals, like reflexives, are monoargumental (that is, the reciprocalizer does not have a theta role). The sole argument is the internal argument, which is identified with the initiator ("agent") role via the semantics of the reciprocalizer. While the semantics of reciprocals under this analysis are similar to those proposed by Bruening 2004, the syntax diverges: as already mentioned, Bruening argues for an unergative analysis and

uses examples like (23) (from Chichewa, where the strict reading in reciprocals is likewise impossible) in support of the semantics he gives for his RecipV head (he does not explicitly discuss the syntactic implications), wile Oikonomou argues that these data are compatible with an unaccusative analysis.

It seems, however, that the "agentive" semantics of reciprocals and reflexives in Greek-type languages should be dissociated from their (intransitive and most likely unaccusative) syntax. Oikonomou (2014), for example, proposes that the reciprocal head is distinct from the "agentive" head v, whose argument must be existentially bound by the middle/non-active voice head. I will come back to this point in Sections 4.3 and 4.4.

To summarize, there is some evidence that both reciprocals and reflexives in Greek-type languages should be analyzed as intransitive and unaccusative structures, based on recent arguments from focus, ellipsis, and proxy readings. While this is less intuitive in the case of reciprocals, their agentive semantics may be due to the voice head that determines non-active morphology and are not necessarily a property of their reciprocal meaning.

2.2.3 Dispositional middles

Dispositional (or "generic") middles are similar to passives in that they seem to be derived from transitive predicates through promotion of the internal argument to subject position (note that "middle" here refers to a syntactic construction, not to a particular kind of verbal morphology). This is the analysis proposed by Keyser and Roeper (1984) for English "middle constructions" such as (24) (see also Roberts 1987: 185ff., Stroik 1992, 1999, and Ackema and Schoorlemmer 1995 on English and Lekakou 2005 on middle constructions cross-linguistically).

(24) a. Bureaucrats bribe easily
b. The books sold quickly
c. The baggage transfers efficiently

(25) a. These books don't sell
b. This bread doesn't cut

Keyser and Roeper (1984) show that this kind of middle formation in English is productive, but only grammatical with adverbs (or negation, as in (25)). However, they do not explain why the adverbs are obligatory.

In languages with a distinction between active and non-active morphology, dispositional and generic constructions take non-active morphology.[5] Adverbs are not always required.

(26) Hebrew (from Alexiadou and Doron 2012):

ha-xulca lo hitgahaca (l-o)
the-shirt not iron.INT.MID (to-him)

"The shirt didn't iron (for him)"

(27) Modern Greek (from Alexiadou and Doron 2012):

afto to vivlio diavazete efkola
this the book reads.NACT easily

"This book reads easily"

Languages differ in whether or not these dispositional constructions have implicit agents that can license *by*-phrases. While the English and German "middle constructions" are ungrammatical with an agentive *by*-phrase (unlike passives), cp. (28), Greek dispositional/generic constructions do license agentive *by*-phrases, cp. (29).

(28) *Bureaucrats bribe easily by Mary

(29) Modern Greek (from Lekakou 2005: 20):

Afto to vivlio diavazete efxarista akomi ki apo megalus
this the book read.NONACT.IMPERF.3SG with.pleasure even and by grown-ups

"This book reads with pleasure even by grown-ups."

[5] See Tsimpli (1989) for Modern Greek, also Lekakou (2005: 13ff.) for a discussion of dispositional readings of formally active verbs.

It seems, then, that the dispositional reading in languages like Modern Greek is very similar to a generic passive, such as English (30).[6]

(30) The butter is kept in the fridge

In languages like Modern Greek, the morphology on the verbs in the equivalents of (30) is identical to that of (29) (non-active). The question of the "middle construction" in English is therefore not relevant to languages with a bivalent voice system, since it is reducible to the question of genericity in non-active voice constructions more generally.

Moreover, these generic readings are usually connected to imperfective aspect (although the language-specific implementation of this varies). In Modern Greek, "dispositional middle" readings always appear in the imperfective aspect (as in (32)), while the passive can be both generic and episodic, in which case it can appear with perfective aspect ((31), both examples from Lekakou 2005: 14; NB Lekakou uses "middle" to refer to generic middle constructions like (29), not to a particular type of verbal morphology):

(31) Passive:

Afto	to	vivlio	diavastike	xtes
this	the	book.NOM	read.3SG.NONACT.PAST.PERF	yesterday

"This book was read yesterday."

(32) Middle:

Afto	to	vivlio	diavazete	efkola
this	the	book.NOM	read.3SG.NONACT.PRES.IMPERF	easily

"This book reads easily."

Note, however, that both the episodic "passive" in (31) and the generic "middle" in (32) take the same voice morphology on the verb, namely non-active.

---

[6] I am grateful to Sabine Iatridou for pointing this out to me.

This is also the case for the older Indo-European languages, where the dispositional use of middle morphology is not always distinguishable from its passive use (see Section 2.2.4). Compare the following example from Vedic:

(33) RV 6.10.4d

śocíṣā dadṛśe pāvakáḥ
glow.INSTR see.3SG.PERF.MID pure.NOM

"the pure one is visible by his glow" (or "is seen through/by his glow")

The instrumental phrase in this example seems to have the same function that adverbs like *easily* have in the English "middle construction".

Because of this overlap with passives in Greek-type languages, Lekakou (2005) argues that the "dispositional middle" construction is "parasitic" on the passive construction in these languages. The dispositional reading is achieved by a generic operator GEN that ascribes a disposition to the internal argument. Oikonomou (2013), based on Lekakou (2002) and (2005), proposes that this operator is introduced by an imperfective aspectual projection (since dispositional middles in Modern Greek must be imperfective) and that it also existentially binds the external argument.[7] As in passives, the external argument of generic/dispositional constructions is demoted and the internal argument which carries the disposition moves to the subject position. Variations of this approach have been proposed by Keyser and Roeper (1984), Condoravdi (1989), Lekakou (2002) and (2005), Alexiadou and Doron (2012), and Oikonomou (2013). While I cannot go into the details of these proposals here, what is important is that verbs with non-active morphology in Greek-type voice systems can have a generic/dispositional reading, and that this construction is similar to ("parasitic on" in Lekakou's terminology) the passive in these languages. In other words, this is another formally non-active construction in which the surface subject is not an agent.

[7]Cp. also Alexiadou and Doron (2012: 26), who propose that in dispositional middles "[t]he external argument is eventually bound in the context of a possibility modal", such an approach depends on whether existential binding of the external argument is assumed to lead to its syntactic suppression, since we have seen that *by*-phrases are possible in Modern Greek.

2.2.4 (Medio)passives

The terms "mediopassive" and "passive" refer to two closely related constructions in which the surface subject of the corresponding active transitive clause is demoted and the logical object is promoted to subject position (note that "mediopassive" and "passive" once again refer to syntactic constructions rather than to a particular type of verbal morphology).

To illustrate this, English has a construction that is sometimes referred to as "mediopassive", namely the so-called "*get*-passive" in (34b) (see Haegeman 1985, Arce-Arenales et al. 1994, Givón and Yang 1994, Huang 2013, and Wanner 2013 on the *get*-passive in general).

(34) a. Mary's car was stolen.

b. Mary's car got stolen.

The intuition behind this term seems to be that of a passive with certain "middle" characteristics, such as the absence of an implicit demoted agent. The *get*-passive, for example, is incompatible with agent-oriented adverbs and control clauses, both of which are fine with the *be*-passive (examples from Wanner 2013: 50).

(35) a. The book was/*got torn on purpose.

b. The ship was/*got sunk [PRO to collect insurance money]

However, distinguishing passive from mediopassive constructions is not always easy, since non-canonical passives in general vary cross-linguistically with respect to their semantic and morphosyntactic properties (see the papers in Alexiadou and Schäfer 2013), and it is not clear whether the distinction is even relevant for languages with a bivalent voice system, like Greek.

Alexiadou and Doron (2012) argue that in languages that have a trivalent *morphological* distinction (active–middle–passive), "passive" is expressed through passive morphology, while the "mediopassive" is expressed through middle morphology. Evidence for this comes from Hebrew, which has a trivalent voice system at least in some tense/aspect-stems. While the mediopassive (marked by middle morphology) can occur with causer (36b), and agent *by*-phrases, the passive (marked by passive morphology) can occur only with agents ((36a); all

Hebrew examples are from Alexiadou and Doron 2012).

(36) a. Passive:

hu huva l-a-mesiba al-yedey xavert-o/*saqranut-o
he bring.CAUS.PASS to-the-party by friend-his/*curiosity-his
"He was brought to the party by his friend/*by his curiosity"

b. Mediopassive:

hu nitmax al-yedey emunato ha-xazaqa
he support.SMPL.MID by faith.his the-strong
"He was supported by his strong faith"

In general, the Hebrew mediopassive can be ambiguous between an anticausative and a mediopassive reading, whereas the "real" passive cannot. The anticausative/mediopassive can occur with a phrase meaning "by itself", whereas the passive cannot.

Moreover, in situations where a morphologically distinct passive is available, the agentive mediopassive reading of a formally middle verb is blocked, as in the Hebrew intensive template which can take active, middle, or passive morphology.[8] (37a) is an example of an agentive passive, (38a) shows that this reading is blocked for the corresponding middle construction. (37b) shows that the morphological passive cannot have an anticausative reading (triggered by the phrase "by itself"), (38b) shows that the corresponding middle does have this reading.

(37) a. ha-gader porqa al-yedey ha-mafginim
the-wall dismantle.INT.PASS by the-demonstrators
"The wall was dismantled by the demonstrators"

b. *ha-gader porqa me-acma
the-wall dismantle.INT.PASS from-itself
"The wall was dismantled by itself"

(38) a. *ha-gader hitparqa al-yedey ha-mafginim
the-wall dismantle.INT.MID by the-demonstrators
"The wall fell apart by the demonstrators"

[8]The same is true in Sanskrit and Greek, which develop distinct passives for some tense/aspect stems, cp. Jankuhn (1969: 39) for Greek.

b. ha-gader hitparqa me-acma
the-wall dismantle.INT.MID from-itself
"The wall fell apart by itself"

Finally, formally middle mediopassives can give rise to dispositional readings (as discussed in the previous section), whereas formally passive forms cannot:

(39) a. Dispositional middle:

ha-xulca lo hitgahaca
the-shirt not iron.INT.MID
"The shirt didn't iron" (= it was impossible to iron the shirt)

b. Passive:

ha-xulca lo gohaca
the-shirt not iron.INT.PASS
"The shirt wasn't ironed" (verbal passive, dispositional reading not possible)

c. Dispositional/medio-passive:

migdal ayfel lo nir'a mi-šam
tower Eiffel not see.SMPL.MID from-there
"The Eiffel tower was not visible/was not seen from there" (both readings possible)

The generalization that emerges is that middle morphology in trivalent voice systems is used for passive readings under certain circumstances (called "medio-passive"), but middle-marked verbs in such voice systems generally oscillate between anticausative, generic, reflexive, and mediopassive interpretation (the "voice syncretism" of Embick 1998 and Embick 2004a), whereas passive verbs take distinct morphology and show no such variation in interpretation. While the formally middle mediopassive can have an implicit agent, this is not obligatory, unlike in the passive.

The question remains whether the mediopassive/passive distinction is relevant for languages with a bivalent voice system. In Greek, for example, it is possible to differentiate between the anticausative and the passive reading of non-active marked predicates via the different prepositional "*by*-phrases" they take: The anticausative takes the preposition *me*,

the mediopassive takes *apo*.[9]

(40) Greek mediopassive/anticausative:

i times miothikan **apo** to diefthindi/**me** tis nees ekseliksis
the prices lowered.NACT by the director/with the new developments

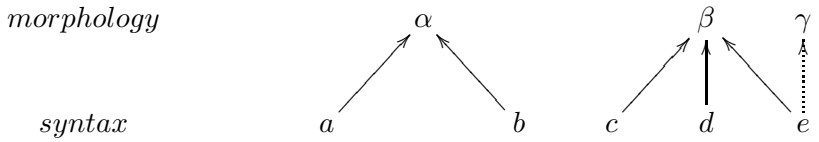
"The prices were lowered by the director/went down because of the new developments"

However, there is no obvious way of differentiating between a "mediopassive" and a "passive" reading of such predicates. This leads Alexiadou and Doron (2012: 23) to propose that Modern Greek only has a middle voice head μ that triggers non-active morphology in anticausative, reflexive, dispositional, and mediopassive constructions, but lacks a designated voice head π for passive. In a similar vein, Kallulli (2007) argues that the anticausative/passive distinction has a different status in a language like English, where distinct verbal morphology is available for each construction, compared to that of Albanian, where both fall together under (non-active) "voice syncretism" (and there is no distinction between *by*- and *from*-phrases, as opposed to English).

What is relevant for the Indo-European languages under discussion is that non-active marked verbs can in principle be interpreted as passives (and are then sometimes called "mediopassives"), and that this passive interpretation is blocked if a distinct morphological passive is available for a given verb, as in the Hebrew intensive examples above. In other words, a syntactic context may be associated with a different morphological exponent depending on the language. This is illustrated in figure 3; the context e ("passive") is associated with the morphological exponent β when no other exponent is available, but can have its designated exponent γ under certain circumstances. Under this view, the α-β version of figure 3 represents a bivalent system, while the α-β-γ version represents a trivalent system. The latter situation is found in Hebrew according to Alexiadou and Doron (2012) as well as in Vedic and Ancient Greek.

[9]But see Alexiadou and Anagnostopoulou (2009) and Alexiadou and Doron (2012: 16f., esp. fn. 13) for some caveats concerning this distribution.

Fig. 3 Partially trivalent voice systems



As a final note, the term "mediopassive" is sometimes also used to refer to non-active morphology, for example, in the linguistic literature on Hittite. To avoid confusion, I will not use "mediopassive" to refer to inflectional endings (and avoid the use of this term in general because of the problems outlined in this section).

2.2.5 Self-benefactives

Self-benefactives and "indirect reflexives" provide an important argument against valency reduction approaches to the middle. Descriptively, self-benefactives are three-place predicates in which the benefactive (or malefactive) argument of an action is identified with the subject of the same action. These constructions usually alternate with regular transitive two-place predicates, so that there is a valency increase, or with benefactive constructions in which the benefactive argument is not identical to the subject. German and French have productive self-benefactive constructions[10]:

(41) German

a. (sich) etwas auf-wärmen
(REFL) something.ACC up-warm
'warm up something (for oneself)'

b. (sich) etwas kaufen
(REFL) something.ACC buy
'buy something (for oneself)'

c. (sich) etwas runter-laden
(REFL) something.ACC down-load
'download something (for oneself)'

[10] I am grateful to Laurence B-Violette for her help with the French examples.

(42) French

a. (se) prendre quelque chose
(REFL) take something.ACC
'take something (for oneself)'

b. (s') acheter quelque chose
(REFL) buy something.ACC
'buy something (for oneself)'

c. (se) monter quelque chose
(REFL) set.up something.ACC
'set up something (for oneself)'

In languages with a morphological distinction between active and non-active voice, we find that the predicates of self-benefactive constructions take non-active/middle morphology, as in Vedic:

(43) Vedic self-benefactives

a. RV 8.45.39:

atā́ ... hárī gṛ́bhṇe
these.ACC.DU horses.ACC.DU seize.1SG.PRES.MID
"I am seizing these two horses for myself."

b. RV 1.161.6:

bṛ́haspátir viśvárūpā́m úpājata
Bṛ́haspati.NOM Visvárūpā́.ACC PRVB.drive.3SG.IPF.MID
"Bṛ́haspati drove away [the cow] Visvárūpā́ for himself."

c. RV 1.36.2:

agníṃ dadhire
Agni.ACC place.3PL.PERF.MID
"They have installed Agni for themselves, for their own benefit."

Note that all the verbs in (43) (*gṛ́bh* 'seize', *aj* 'drive', and *dhā́* 'place') are alternating verbs, that is, they can take either active or middle morphology.

So far, I have started to build an argument for the generalization that the surface subjects of middle-marked verbs are not agents. Self-benefactives are at first glance an obstacle to this

generalization, since the semantics of predicates like (43) seem to indicate agentivity. They are very similar to benefactive or "affected experiencer" constructions (Bosse et al. 2012), in which the subject is not coreferent with the benefactive argument/affected experiencer.[11] The following examples illustrate this alternation for German.

(44) German

a. Livia hat mir Firefly runtergeladen
Livia has me.DAT Firefly downloaded
"Livia downloaded Firefly for me"

b. Livia hat sich Firefly runtergeladen
Livia has REFL Firefly downloaded
"Livia downloaded Firefly for herself"

In Vedic, however, we see a difference in voice morphology between the equivalent of the benefactive/affected experiencer construction in (44a) and the self-benefactive in (44b). While the benefactive in which the subject and the benefactive participant are non-coreferent takes active morphology, the self-benefactive takes middle morphology, as in the examples in (43) and in (45b).

(45) Vedic

a. RV 4.20.9d:

(índraḥ) ... dadhā-ti drávi̯ṇaṃ jaritré
(Indra) place-3SG.NONPAST.ACT wealth.ACC singer.DAT
"(Indra) installs/arranges wealth for the singer"

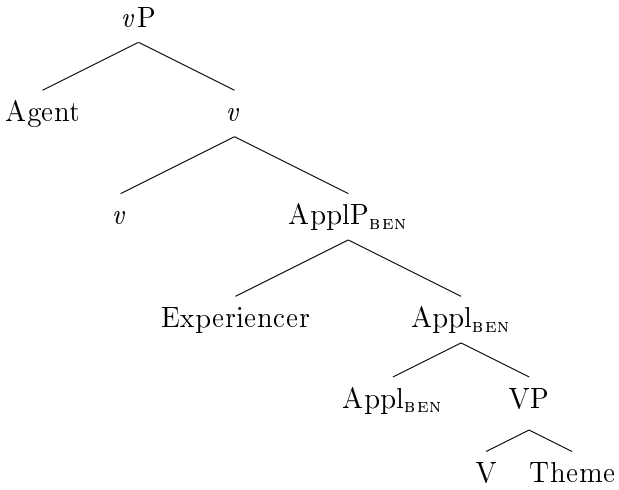
b. RV 1.3.11c:

yajñáṃ dadh-e sárasvatī
sacrifice.ACC place.PERF-3SG.PERF.MID Sarasvatī.NOM
"Sarasvatī has arranged/taken the sacrifice for herself"

[11] Bosse et al. (2012) argue that benefactive constructions differ from affected experiencer constructions syntactically and semantically, as well as from possessor and attitude holder constructions. For reasons of space, I cannot review their arguments for these distinctions and subsume them under "benefactives" in the following discussion. This simplification is convenient for expository purposes, but nothing hinges on it.

I propose that this difference in voice morphology reflects a difference in the status of the surface subject in the two constructions (benefactives vs. self-benefactives). Pylkkänen (2008) argues that in benefactives an applicative head Appl_{Ben} located between VP and VoiceP/vP (the projection introducing the agent) introduces the benefactive argument which is "thematically related to the event described by the verb" (p. 12).[12] The structure of such a benefactive construction is illustrated in (46).

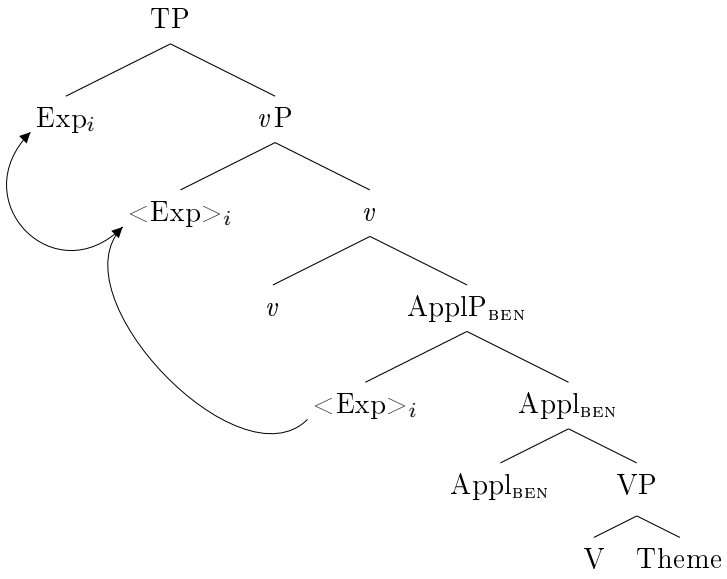
(46) Benefactive:



In self-benefactives, the subject is co-referent with the benefactive argument. Given the structure in (46), there are two possible ways of accounting for this: 1) The surface subject is an agent merged in the specifier of v, as in benefactives; the experiencer is substituted by an empty category (Vedic) or a weak pronoun (German); or 2) the surface subject is the experiencer/benefactive argument merged by Appl_{BEN} and then moves to the subject position; its copy is spelled out as zero (Vedic) or weak pronoun (German). I propose that 2) is the right analysis. The experiencer (Exp) is merged in the specifier of Appl_{BEN} and then moves to the subject position.

[12] Building on this, a similar analysis is proposed by Bosse et al. (2012) who argue that the experiencer argument of the affected experiencer construction is merged by a dedicated projection AffP, which can attach either below or above vP. Pylkkänen (2008) likewise operates with both high and low attachment of Appl_{BEN}. For present purposes, only low attachment will be relevant.

(47) Self-benefactive:



The difference in voice morphology between benefactives and self-benefactives is a result of the different status of their surface subjects. I argue for this analysis in more detail in Section 4.3.[13]

More evidence for this analysis may come from a very similar Vedic construction involving inalienably possessed object DPs. This transitive construction consists of an accusative object that is inalienably possessed by the nominative possessor, usually a body part DP. Like in Vedic self-benefactives, the predicate takes middle morphology:

(48) a. 9.15.4a:

eṣá	śr̥ṅgāṇi	... chíśī-te	... vr̥ṣā
This	horns.ACC	chafe-3SG.PRES.MID	bull.NOM

[13] I am grateful to Benjamin Bruening for discussing these constructions with me, and for pointing out that the impossibility of proxy readings in English self-benefactives could be independent support for a movement analysis of the surface subject. In a Mme Tussaud's context (or time travel, if you prefer), an English reflexive like (i) has two readings, one in which the subject hits herself and one in which she hits a statue of herself (proxy reading). On the other hand, in the self-benefactive in (ii), the proxy reading is impossible—the interpretation cannot be that the subject gets a coat for her statue.

i. I'm gonna hit myself (±proxy)

ii. I'm gonna get me a coat (-proxy)

This pattern would be predicted under a movement analysis of self-benefactives, since in these cases the experiencer spells out a copy of the moved subject, making non-co-reference impossible.

"This bull is chafing his horns"

b. 10.142.5:

bāhū .. agne anu-mármṛjn̄o ...
Arms.ACC.DU Agni.VOC PRVB-brushing.MID.PTCP.NOM.SG
anvéṣi bhū́mim
PRVB.go.3SG.PRES.ACT earth.ACC

"Withdrawing your arms, Agni, you go out to the earth"

c. 6.71.1a:

devaḥ savitā ... bāhū́ ayaṃs-ta
god.NOM Savitar.NOM arms.ACC.DU raise-3SG.AOR.MID

"The god Savitar raised his arms"

I have argued elsewhere that Vedic "indirect reflexives" like (48) should be analyzed along the lines of Rooryck and Vanden Wyngaerd (2011)'s analysis of simple reflexives in Dutch, in which both the possessor (the surface subject) and the possessum (the object) are base-generated in the complement of VP (Grestenberger To appear). The details of the analysis are not relevant here, but if it is correct, we would have a second formally transitive construction in Vedic in which middle morphology on the verb is triggered by a DP that has moved to subject position from below vP.

Finally, it is worth mentioning that both French and German have verbs that are transitive and obligatorily take a reflexive pronoun. These fall into a limited set of semantic classes, mainly experiencer/cognition verbs and verbs of appropriation.

(49) German

a. (sich) etwas überlegen
(REFL) something.ACC consider
'consider something'

b. (sich) etwas einbilden
(REFL) something.ACC imagine
'imagine something'

c. (sich) etwas trauen
(REFL) something.ACC dare
'dare (to do) something'

(50) French

a. (s') approprier quelque chose
(REFL) appropriate something.ACC
'appropriate something'

b. (se) départir de quelque chose
(REFL) dispose of something
'dispose of something'

c. (s') emparer de quelque chose
(REFL) seize of something
'seize something'

At first glance, one could argue that these verbs share certain similarities with the deponent verbs of languages like Greek and Latin. They have nominative subjects and accusative objects, and obligatorily take the reflexivizing morphology that in these languages occurs in similar contexts as non-active morphology in Greek-type languages. However, I will make it clear in the following chapters that deponent verbs cannot be reduced to self-benefactives. First, they do not have the same meaning, that is, speakers of Modern Greek do not have the intuition that deponents like *metahirizome* 'use' or *epititheme* 'attack' have a meaning component "for oneself" or something similar. The same holds for languages like Vedic and Greek. Although speaker intuitions are not available for these languages, the contexts in which deponent verbs are used do not suggest any self-benefactive connotations. In Section 4.2, I provide arguments in favor of an analysis of deponents as agentive verbs. Agentive verbs are rare in "obligatory self-benefactives" in languages like German and French. The predicates in (49) are easily analyzable as psych verbs,[14] and even more promising cases like

[14]German may have a few idioms with agentive predicates in obligatory self-benefactives, but good cases are not easy to find (the following examples were provided by Hannes Fellner and Matthias Wenigwieser), and even those have a compositional self-benefactive/affected experiencer meaning, unlike deponents.

i. sich einen Zacken aus der Krone brechen
REFL INDEF.ACC spike.ACC from the crown break
'lose face, humiliate oneself' (lit. 'break a spike from one's crown (for oneself)')

ii. sich über die Häuser haun
REFL over the houses throw
'take off, to leave' (lit. 'throw oneself over the houses')

the French ones in (50) have a clear self-benefactive meaning component. I conclude that the generalization that languages with a French/English/German type of voice system do not have deponents is not threatened by cases like (49) and (50), and that deponents cannot be reduced to self-benefactive or indirect reflexive constructions (at least not synchronically).

2.2.6 Summary

In this section, I have introduced the four core syntactic contexts in which non-active morphology is found in bivalent synthetic ("Greek-type") voice systems, namely anticausatives, reflexive/reciprocal verbs, dispositional/generic constructions, and passives (/mediopassives); self-benefactives are usually grouped with reflexive constructions.

I have argued that what is noteworthy about these four core classes of canonical uses of middle morphology is that their surface subjects are not agents. In fact, this seems to be the syntactic common denominator of these otherwise very diverse constructions, and it is also true for the non-oppositional uses of non-active morphology. These are discussed in the next section.

2.3 Non-oppositional uses of middle morphology

Besides the oppositional uses of middle morphology that were just discussed, there are other groups of verbs that tend to take middle morphology in active-middle voice systems, but differ from the ones discussed above in not taking part in any kind of voice alternation. These include many intransitive predicates that are often referred to as deponents in the literature, in particular Kemmer (1993)'s classes of states, denominative and deadjectival verbs, and verbs of motion, as well as cognition verbs/psych verbs/experiencer verbs, which are often transitive.

---

iii. sich einen rein-stellen
REFL INDEF.ACC in-put
'to get drunk' (lit. 'put one in for/to oneself')

(51) States

a. Vedic: *ā́ste* 'sits', *śáye* 'lies', *édhate* 'thrives'

b. Greek: *keĩmai* 'lie', *aiskhúnomai* 'am ashamed'

c. Modern Greek: *ime* 'be', *dikeume* 'have a right to', *politevome* 'be involved in politics', *diakime* 'be disposed toward', *ironevome* 'be ironic',

(52) Motion (translational/non-translational)

a. Vedic: *plávate* 'swims, floats', *gā́hate* 'enters, immerses', *násate* 'returns'

b. Greek: *pétomai* 'fly', *érkhomai* 'come'

c. Latin: *vagor* 'wander', *gradior* 'advance', *orior* 'rise'

d. Modern Greek: *erhome* 'come', *afiknume* 'arrive'

(53) Psych verbs/experiencer verbs/verbs of cognition

a. Vedic: *mányate* 'thinks', *bhándate* 'is happy', *módate* 'enjoys'

b. Greek: *maínomai* 'rage', *házomai* 'be in awe of', *sébomai* 'fear'

c. Latin: *fruor* 'enjoy', *opīnor* 'believe, think', *vereor* 'revere'

d. Modern Greek: *fovame* 'fear', *gevome* 'taste', *esthanome* 'feel'

The same observation that was made above with respect to the canonical uses also holds for these verb classes: their subjects are not agents. They are experiencers in the case of (53) and internal arguments in the case of stative verbs and verbs of motion.

Although non-oppositional anticausatives, reflexives, or (medio)passives are relatively rare, occasional examples are also found in these languages, e.g.:

(54) Non-oppositional anticausatives

a. Vedic: *rócate* 'shines', *pā́paje* 'becomes solid'

b. Latin: *lābor* 'slip, slide', *līquor* 'flow, melt', *morior* 'die'

c. Hittite: *āri* 'becomes hot', *kiša(ri)* 'happens, becomes'

d. Modern Greek: *ekrigniome* 'explode', *enilikionome* 'become an adult', *marenome* 'wilt'

(55) Non-oppositional reflexives/reciprocals

a. Vedic: *nímṡante* 'they kiss', *spárdhante* 'they fight'

b. Greek: *mákhontai* 'they fight'

c. Latin: *amplectunctur (inter sē)* 'they embrace each other', *osculantur* 'they kiss'

d. Modern Greek: *afto-eksipiretume* 'I serve myself', *alílo-eksipiretumaste* 'we serve each other', *adelfo-skotonomaste* 'we brother-kill each other' (i.e., brothers killing each other)

(56) Non-oppositional (medio)passives

a. Greek: *gígnomai* 'am born', *kídnamai* 'am spread around'[15]

b. Latin: *nascor* 'am born'

c. Modern Greek: *itome* 'am beaten', *ilio-keome* 'am burnt by the sun', *idrevome* 'am watered'

I will argue that what is relevant for understanding the canonical function of non-active morphology is not the oppositional vs. non-oppositional distinction, but the status of the subject. If the subject is not an agent, non-active morphology is assigned by the mechanism described in Section 2.6. If the subject is an agent, active morphology emerges by default.

This means that the non-oppositional middles in (47-52) are not actually "mismatch" verbs. They instantiate a canonical function of the use of non-active morphology—they simply do not have anything that could be interpreted as an active counterpart. It also means that having an accusative object alone is not enough for a given verb to classify as a mismatch verb, since many experiencer/cognition verbs on the surface emerge with NOM–ACC case marking. Based on these facts, I give a revised definition of deponency in Section 2.4.

While the argument structure of these classes is relatively well understood, some of them cross-linguistically exhibit variation in their voice morphology and need further discussion, since these classes will be relevant to the revised definition of deponency and the discussion of Indo-European deponents in Chapter 3. The first consists of denominal and deadjectival

[15] *Passivum tantum* in Homer.

verbs that differ with respect to agentivity. The second class are canonical experiencer verbs ("psych verbs"). The thirds, related to the second, are verbs of speech and communication (cp. Levin 1993: 202ff.).

2.3.1 Denominal and deadjectival verbs

In their corpus study of Modern Greek deponents,[16] Zombolou and Alexiadou (2014) report that 68% of the verbs in their corpus are either denominal and deadjectival (note that they use the term "deponents" for all verbs that take only middle morphology). They only discuss intransitive denominal and deadjectival deponents in which the subject is affected by the property of the base noun/adjective and argue that deponency is productive for these verb classes. Examples of denominative deponents include *seliniazome* 'be affected by the moon' (*selini* 'moon'), *idrevome* 'be watered' (*idor* 'water'), *itome* 'be defeated' (*ita* 'defeat'), *ethizome* 'become addicted' (*ethismos* 'addiction'), etc., deadjectival verbs include *enilikionome* 'reach adulthood, become an adult' (*enilikios* (adj.) 'adult'), *ironevome* 'be ironic' (*ironikos* 'ironic'), *tsigunevume* 'be stingy' (*tsigunis* 'stingy'), etc.

Based on these examples only, we could argue that the formation of intransitive non-oppositional verbs belongs to the canonical functions of non-active morphology, since all the examples given here are stative or inchoative verbs that comply with the generalization that canonical non-active verbs do not have an agentive subject.

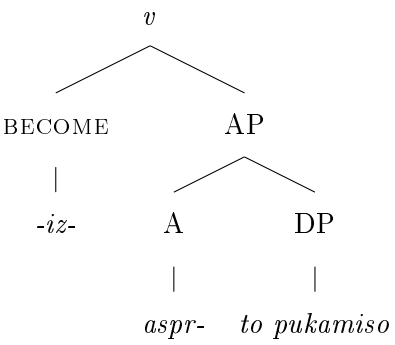
However, not all denominal/deadjectival verbs behave as unaccusatives, and not all that do take non-active morphology. Alexiadou and Anagnostopoulou (2004) point out that a large class of Modern Greek deadjectival verbs of the causative alternation always take active morphology, in both the causative and the inchoative variant. They cite examples such as *asprizo* 'whiten' (*aspros* 'white'), *kokinizo* 'redden' (*kokinos* 'red'), *skureno* 'darken' (*skuros* 'dark'), *stegnono* 'dry' (*stegnos* 'dry'), *stenevo* 'narrow' (*stenos* 'narrow'), etc. Their analysis of the anticausative variant has already been introduced in Section 2.2.1; its surface subject

[16] I am very grateful to Artemis Alexiadou and Katerina Zombolou for sharing their corpus of Modern Greek deponents with me, and to Despina Oikonomou for her help with these data.

originates in a predicative structure A(djectival)P/RootP together with the adjective, which is embedded under an event-introducing projection vBECOME (similarly Harley 1999, 2005).

(57) Structure of a deadjectival anticausative verb (adapted from Alexiadou and Anagnostopoulou 2004: 130)

a. to pukamiso asprise
the shirt whiten.3sg.act
"The shirt whitened"

b. 

Note that the "verbalizing" projection v is non-agentive and does not have a specifier or case feature (i.e., it is "defective" in the sense of Chomsky 2001). I will return to this analysis in the discussion of *activa tantum* in Section 5.2.

For our purposes, it is important to emphasize that the older Indo-European languages also have both formally active and formally non-active denominal and deadjectival verbs. The opposite situation to the one in Greek is attested in Old Irish, where denominative/deadjectival verbs in *-igidir* always take non-active morphology, but can be both transitive and intransitive, e.g., *dechra-igidir* 'is distinguished/distinguishes' (*dechur* 'difference'), *doimn-igidir* 'is low/lowers' (*domne* 'depth'), *suid-igidir* 'places' (*suide* 'seat'), *sonairtna-igidir* 'strengthens, becomes strong' (*sonairt* 'strong'), *catha-igidir* 'fights' (*cath* 'battle'), etc. (examples from Griffith 2010).

In Ancient Greek, the suffixes *-éō̄*, *-áō̄*, and *-óō̄* are productive in forming active denominal and deadjectival verbs from different nominal stems (see Debrunner 1917: 88ff., Tucker 1990, Rau 2009b on these verb classes; on deadjectival formations in Indo-European see in particular Rau 2009a: 111ff.):

Table 1. Greek active denominal/deadjectival verbs

	verb	base
-éō	*philéō* 'love'	*phílos* 'dear'
	kosméō 'arrange, order'	*kósmos* 'order'
	turannéō 'be a tyrant'	*túrannos* 'tyrant'
-áō	*nikáō* 'conquer'	*níkē* 'victory'
	timáō 'honor'	*timḗ* 'honor'
	boáō 'call'	*boḗ* 'call'
-óō	*orthóō* 'straighten'	*orthós* 'straight'
	stephanóō 'crown'	*stéphanos* 'crown'
	kakóō 'mistreat'	*kakós* 'bad'

Historically, the verbalizing suffix of these verbs was *-i̯e/o-*, which was added to the nominal/adjectival basis. The cognate suffix *-yá-* makes denominative and deadjectival verbs in Vedic Sanskrit, e.g., *taviṣyá-* 'be strong' (*taviṣá-* 'strong'), *amitrayá-* 'be an enemy' (*amítra-* 'enemy'), *ratharyá-* 'drive in a chariot' (*rátha-* 'chariot'), *vasnayá-* 'buy' (*vasná-* 'price'), *mṛgáya-* 'hunt deer' (*mṛgá-* 'deer', etc., which vary between taking active and middle morphology (see Insler 1997 and Rau 2009b for more examples).

Based on the discussion of alternating verbs in the previous section, we would expect stative and inchoative denominal/deadjectival verbs to take non-active morphology in these languages, while their causative and factitive counterparts should take active morphology. This is to a large degree true for deadjectival verbs in Ancient Greek (cp. Debrunner 1917: 100, Rau 2009a: 115ff.).

Table 2. Voice alternations in Greek denominal/deadjectival verbs:

itr., non-act.	tr., act.	base
thermaínomai 'become hot'	*thermaínō* 'heat, make hot'	*thermós* 'heat'
kakóomai 'suffer, be mistreated'	*kakóō* 'mistreat'	*kakós* 'bad'
melaínomai 'turn black'	*melaínō* 'blacken'	*mélas* 'black'
pakhűnomai 'become thick'	*pakhűnō* 'thicken, make thick'	*pakhús* 'thick'
misthóomai 'rent sth. for oneself'	*misthóō* 'rent sth. out to sbdy.'	*misthós* 'fee, rent'
komízomai 'receive provisions'	*komízō* 'provide for'	*komidḗ* 'provision'
pistóomai 'be trustworthy, pledge'	*pistóō* 'make trustworthy'	*pistós* 'trustworthy'

While voice alternations in denominal and deadjectival verbs like in (57) must be accounted for by a general theory of the distribution of voice morphology in "alternating verbs", there are two contexts which will not be covered by such a theory: First, formally active unaccusative deadjectival (or denominal) verbs such as (47). The analysis of these has already been outlined (based on Harley (1999), Alexiadou and Anagnostopoulou 2004, etc.) and in general is connected to the question of whether unaccusative *activa tantum* represent a mismatch problem. This question will be adressed in Section 5.2.

Second, and more relevant, there are also a number of formally non-active agentive denominal and deadjectival verbs in the older Indo-European languages that fulfil the provisional criteria for deponency outlined so far: they have active, transitive syntax, but non-active morphology. The following table exemplifies this.[17]

[17] These examples are valid for the corpora defined in Chapter 1; some of these verbs are found with active morphology at later stages of the respective languages.

Table 3. Agentive denominal/deadjectival deponents

Language	Non-act. verb	base
Vedic	*duchunāyá-* 'harm sbdy.'	*duchúnā-* 'harm'
	mantráya- 'say a *mantra*'	*mántra-* 'song, prayer'
	mṛgáya- 'hunt deer'	*mṛgá-* 'deer'
Greek	*lēízomai* 'rob, plunder'	*lēís* 'spoils, booty'
	lōbáomai 'outrage, mistreat'	*lṓbē* 'outrage'
	tektaínomai 'build, contrive'	*téktōn* 'carpenter'
Latin	*fūror* 'steal'	*fūr* 'thief'
	medicor 'cure, heal'	*medicus* 'doctor'
	minor 'threaten'	*minae* 'threats'

I add verbs like these to the synchronic "mismatch verbs" discussed in Chapter 3 because they fulfil the criteria for deponent status defined in Section 2.4.

To summarize, stative and inchoative denominal and deadjectival verbs tend to take non-active morphology in binary voice systems, but there is a lot of variation—some deadjectival verb classes take only active morphology in Modern Greek (similarly in Latin and Hittite, cp. Rau 2009a: 112ff.), while others show the same voice alternation as primary causative alternation verbs. Moreover, some non-active denominative and deadjectival verbs are transitive and agentive and can therefore be classified as voice mismatch verbs (cp. (57)).

2.3.2 Experiencer verbs

Experiencer verbs are relevant to the discussion of deponency because their behavior with respect to case and surface argument alignment is very similar to that of canonical agentive transitive verbs in many Indo-European languages. Zombolou and Alexiadou (2014) (cp.

also Lavidas and Papangeli 2007) list a number of non-active transitive verbs whose nominative subjects are experiencers, like *esthanome* 'feel', *osmizome* 'smell', *fovame* 'fear', *gevome* 'taste', *kapsurevome* 'fall in love with', *drepome* 'be ashamed of', *sevome* 'respect', etc., and argue that non-active morphology is canonical for what they call "cognitive/psych verbs", a broader term that also encompasses verbs of speech, thought, perception, etc.

However, Kemmer (1993: 127ff.)'s discussion makes it clear that the "cognition middle" may actually not be a natural class with respect to voice morphology and argument structure. Kemmer notes, for example, that the voice morphology of verbs of perception (experiencer verbs) is inconsistent and difficult to predict (p. 137). The morphosyntax of experiencer verbs in the older Indo-European languages certainly warrants further study, and I cannot cover this topic exhaustively here. However, the following discussion of Vedic and Ancient Greek will hopefully establish a base line for evaluating voice morphology on these verbs.

First, I follow Pesetsky (1995: 19)'s terminology in distinguishing between Subject Experiencer (SubjExp) verbs in which the surface subject is an experiencer and the object is a theme or stimulus, as in (58a), and Object Experiencer (ObjExp) verbs in which the subject is the theme/stimulus and the object is the experiencer, as in (58b) (cp. also Belletti and Rizzi 1988, Kemmer 1993: 136, Arad 1999).

(58) a. *Bill fears ghosts* (SubjExp)

b. *Ghosts frighten Bill* (ObjExp)

ObjExp verbs behave like causatives in many ways: the surface subject causes a mental change of state in the object. Arad (1999) argues that ObjExP verbs also have the same syntactic structure as causative and agentive transitive verbs and that their surface subject starts out as the external argument of vP. I argue in more detail in Section 2.6 that this structure predicts active morphology in Greek-type languages, and a preliminary overview of Vedic and Greek suggests that this bears out. These verbs are formally active, have a nominative subject and an accusative (more rarely a dative) object and in many cases take overt causative morphology.

Table 4. ObjExp verbs in Vedic and Greek

	Active verb	Case on exp
Vedic	*prīṇanti* 'they gladden, please' ($\sqrt{prī}$)	ACC
	harṣáyati 'pleases, delights' ($\sqrt{hṛṣ}$)	ACC
	chadáyati 'is pleasant to' ($\sqrt{chad}$)	DAT
	ví bībhayat 'scared' ($\sqrt{bhī}$)	ACC
Greek	*phobéō* 'frighten, scare'	ACC
	aiskhűnō 'dishonor'	ACC
	kholóō 'anger'	ACC
	handánō 'please, delight'	DAT
	térpō 'gladden'	ACC

Some of these verbs alternate between active and non-active morphology, in which case the non-active marked verb is the corresponding SubjExp verb (the same pattern is found in Modern Greek, cp. Roussou and Tsimpli 2007). In SubjExp verbs, the surface subject is an experiencer, and Arad (1999) argues that this experiencer is not base-generated in the same position as the causer of ObjExp verbs, but in a lower stative projection V_{BE}. The details are not relevant, but I will argue in Section 2.6 that this "low" base position of SubjExp subjects predicts non-active morphology. Again, this prediction is borne out, albeit with more exceptions. SubjExp verbs in Vedic and Greek usually take non-active morphology and have nominative subjects, but the object case varies widely depending on the thematic role of the object.

Table 5. SubjExp verbs in Vedic and Greek

	Non-active verb	Case on theme
Vedic	*chandayate* 'likes, takes pleasure in' ($\sqrt{chad}$)	ACC; LOC
	juṣánta 'they taste, enjoy' ($\sqrt{juṣ}$)	ACC (GEN)
	pánanta 'they admire' ($\sqrt{pan}$)	ACC
	bháyate 'is afraid of' ($\sqrt{bhī}$)	ABL
	bhuñjaté 'they enjoy' ($\sqrt{bhuj}$)	INSTR
	módate 'is delighted in, rejoices at' ($\sqrt{mud}$)	INSTR; LOC
	mṛ̀ṣyate 'forgets' ($\sqrt{mṛ̀ṣ}$)	ACC
	hárṣate 'is happy about, rejoices at' ($\sqrt{hṛṣ}$)	INSTR
Greek	*házomai* 'am in awe of, fear'	ACC
	hḗdomai 'delight in, am amused by'	DAT
	gánumai 'rejoice in'	DAT
	ákhthomai 'am vexed at, angry with'	DAT
	peíthomai 'trust'	DAT
	ágamai 'admire; envy'	ACC, DAT
	térpomai 'enjoy'	GEN

Vedic has a number of exceptions in which SubjExp verbs take active morphology, most notably *irasyáti* 'is envious, envies' + DAT ($\sqrt{īṛṣ}$), *cākánat*[18] 'liked, was pleased with' + LOC, INSTR, GEN (*kan*), *ráṇyati*, *ráṇyati* 'takes pleasure in' + LOC, (INSTR; $\sqrt{raṇ}$), *sághat* 'endures' + ACC ($\sqrt{sagh}$), *dvéṣṭi* 'hates' + ACC ($\sqrt{dviṣ}$), all Rigvedic. The active inflection on the last

[18] Classified as perfect rather than intensive by Schaefer (1994: 27f. (with references)).

verb seems to be regular from a comparative perspective, however, cp. Greek act. *ekhthaírō*, *stugéō* 'hate', Latin act. *ōdī* 'hate', etc. (cp. Buck and Petersen 1945: 1132f.).

Moreover, the canonical behavior of verbs of perception with respect to voice morphology is somewhat unclear. These tend to be formally active and behave very much like agentive transitive verbs in Vedic (where they passivize, see Benedetti 2012), but show a lot more variation in Greek and usually do not passivize (at least in Homeric Greek).

Table 6. Perception verbs in Vedic and Greek

	Active	Non-active	Case on theme
Vedic	*cétati* 'recognizes, notices' ($\sqrt{cit}$)	*ábhí*, *áva ī́kṣe* 'sees' ($\sqrt{īkṣ}$)	ACC
	jújoṣati 'tastes (sth.)' (*juṣ*)		ACC
	jānā́ti 'knows, perceives' (*jñā*)		ACC
	dadárśa 'has seen' (*dṛś*)		ACC
	páśyati 'sees' (*paś*)		ACC
	śṛṇóti 'hears' (*śru*)		ACC
Greek	*horáō* 'see, look'	*óssomai* 'see, look'	ACC
	akoúō 'hear'	*punthánomai* 'learn, hear'	ACC, GEN
	klúō 'hear'	*péuthomai* 'learn, hear'	ACC, GEN
	eĩdon 'saw'		ACC
	aíō 'perceive, hear'		ACC
		géuomai 'taste'	GEN

This variation is continued within the averbos of some verbs of perception, e.g., middle present *dérkomai* 'see' vs. active aorist *édrakon* 'saw'; middle present *óssomai* 'see' vs. active

perfect *ópōpa* 'have seen' from the same root and suppletive active aorist *eĩdon* 'saw', etc. This class needs further study, but it seems that at least in Vedic, verbs of this class are usually formally active, and a formally non-active transitive perception verb should be considered a mismatch. Moreover, formally non-active ObjExp verbs in both languages can also safely be considered mismatch verbs, while SubjExp verbs canonically take non-active morphology.

Again, it must be stressed that this is a very preliminary survey, but it reinforces the observation that "verbs of cognition" fall into several distinct classes, and that surface transitivity alone is not a predictor of voice morphology in Greek-type languages.

2.3.3 Verbs of speech and communication

Verbs of speech are discussed together with other "cognition middles" by Kemmer (1993: 127ff.). She distinguishes between emotive speech actions (e.g., *lament*, *complain*, *blame*) and non-emotive speech actions like *threaten*, *refuse*, *chide*, *accuse*, *deceive*, etc. These verbs are both morphologically and syntactically difficult to classify. That is, they vary between taking active and non-active morphology in bivalent voice systems, and their surface subject may or may not be an experiencer. Kemmer (p. 134) mentions that there are plenty of minimal pairs of verbs with almost the same meaning, but different voice morphology in these languages. I exemplify this in the following table.

Table 7. Voice morphology on speech act verbs

	Active	Non-active	Case on theme
Vedic	*gṛṇấti* 'praises, greets' ($\sqrt{gṝ}$)	*ī́ṭṭe* 'praises' ($\sqrt{īḍ}$)	ACC
	níndati 'mocks, taunts' ($\sqrt{nid}$)	*óhate* 'they praise' ($\sqrt{uh}$)	ACC
	pṛcchấti 'asks' ($\sqrt{pṛś}$)	*vándate* 'praises' ($\sqrt{vand}$)	ACC
	brávīti 'says (to)' ($\sqrt{brū}$)		ACC (DAT)
	vádati 'says' ($\sqrt{vad}$)		ACC
	vócat 'said, spoke (to)' ($\sqrt{vac}$)		ACC (DAT)
	stáuti 'praises' ($\sqrt{stu}$)		ACC
Greek	*aitéō* 'beg, demand'	*líssomai* 'beg, demand'	ACC
	phēmí 'say'	*eúkhomai* 'praise, declare'	ACC
	eîpon 'said'	*eíromai* 'ask, question'	ACC
	kaléō 'call, summon'	*kélomai* 'urge, command'	ACC
	kleíō, *kléō* 'tell of, make famous'	*pséudomai* 'lie, belie'	ACC
	ómnūmi 'swear'	*mémphomai* 'blame, reproach'	ACC
		steũmai 'promise, declare to'	[inf.]
Latin	*dicō* 'say, tell'	*for* 'speak, say'	ACC
	promittō 'promise'	*polliceor* 'promise'	ACC
	recitō 'recite'	*loquor* 'speak, say'	ACC
	vocō 'call, summon'	*fateor* 'confess'	ACC
	negō 'deny, negate'	*hortor* 'incite, encourage'	ACC
	āiō 'affirm, say'		inf. (ACC)

It is difficult to make any generalizations here. Kemmer invokes the notion "affectedness of the Experiencer" to explain the middle morphology in pairs like Lat. act. *cogitō* vs. non-act. *meditor*, both 'think, consider', but it is not clear how this would predict the voice morphology on, e.g., Lat. *promittō* vs. *polliceor*. However, Kemmer also points out that speech act verbs tend to develop historically from verbs denoting a mental event, citing English *deplore* as an example (p. 133, with reference to Traugott and Dasher 1987).

Because of the variation in voice marking both cross-linguistically and within the same language, it is therefore difficult to decide whether non-active morphology is "canonical" for speech act verbs like the ones in table 7. That is, it is possible that active morphology is actually canonical for these predicates, and that the middle marked variants instantiate "voice mismatches". The reason for this may be that they developed out of experiencer verbs denoting mental states, as suggested by Kemmer. In the following, I assume that this is true at least for transitive speech act verbs that behave as agentive verbs according to the diagnostics in Section 4.2. I therefore include these cases in the lists of deponent verbs in Chapter 3, as well as in the Appendix. The details of the diachronic development of the experiencer argument into an agent is discussed in Section 4.3.

2.3.4 Summary

In this section, I have given an overview of the different non-oppositional (non-alternating) verb classes for which non-active voice morphology can be considered canonical. This was based both on typological considerations (that is, which predicate classes take non-active morphology cross-linguistically) and on the argument structure of these predicates. The generalization that emerges is that verb classes whose surface subject is not an agent (whether alternating or not) canonically take non-active morphology.

I have furthermore discussed two "borderline" cases of verb classes in which both active and non-active morphology is regularly found, namely denominal and deadjectival verbs and speech act verbs. For these verbs, we need a more fine-grained distinction between different subtypes, since some of them have the right argument structure for non-active morphology while others do not. I have argued that we therefore expect to find mismatch behavior in these two broad classes, examples of which are given in Chapter 3.

With this background on canonical uses of non-active morphology, we can now turn to alleged cases of non-canonical uses. In the next section, I discuss such "non-canonical middles"–deponents–and argue for a more narrow definition of deponency than the one that is usually used and that I have operated with so far.

2.4 Delimiting non-canonical middles

Although Alexiadou and Doron (2012) consciously leave out deponents from their list of canonical functions of middle morphology, Embick (1998) makes a point of including them in his list of canonical syntactic contexts in which non-active voice appears in Greek (passive, reflexive, anticausative, deponent; note that he refers to both transitive and intransitive middles as "deponents"). To put this differently, it seems that the non-canonical use of non-active voice is actually a universal property of certain voice systems: "voice mismatches" only occur in particular voice systems, namely ones with synthetic "voice syncretism" morphology (this generalization is also argued for by Weisser 2010: 59ff.). The reasons for this will be addressed in Chapter 5.

In the previous sections, I have given an overview of the canonical uses of non-active morphology, based on the syntactic environments in which non-active morphology is found cross-linguistically. On the other hand, the term "deponent" as I will define it here covers only *non-canonical* middles. This is important, since in much of the relevant literature, the term is used to refer to both formally non-active *transitive* verbs and non-active intransitive verbs that do not have an active counterpart, like the ones discussed in the previous section. In other words, this term is applied to all verbs that happen not to alternate between active and middle morphology, independent of whether or not they instantiate a canonical middle function (thus most recently Kallulli 2013). In describing languages with an active-middle voice system, the term "deponent" is therefore often used synonymously with the term *medium tantum* (Latin for "middle only" verbs). But this practice renders the question of "canonical function" of middle morphology moot, since there is no *a priori* reason why middle morphology should only be found in alternating contexts.

A more nuanced approach is taken by Zombolou and Alexiadou (2014), who argue that the functions of intransitive "deponents" largely correspond to the canonical *oppositional* functions of non-active voice listed above, namely reflexive/reciprocal, anticausative, and passive. "Deponency" in their sense is actually productive for these functions, as well as for denominal and deadjectival formations. On the other hand, experiencer, unaccusative, benefactive, and

stative "deponents" are unproductive in MG. If intransitive "deponents" actually instantiate the canonical functions of the middle voice, they do not constitute a feature mismatch at all. They simply differ from other non-deponent middles in not having an active counterpart.

Transitive deponents, on the other hand, only account for 30% of Zombolou and Alexiadou (2014)'s corpus, and only 11% can be classified as "active-like" according to the authors (that is, as "mismatch" cases under my definition below). The remaining transitive deponents are psych verbs, experiencer verbs, or verbs of cognition like *skeftome* 'think' or *fovame* 'fear', which according to them instantiate the canonical function of non-active morphology.

Finally, 11% of Modern Greek verbs which synchronically take non-active morphology do not fit into any of the categories established as the canonical uses of non-active morphology. This is the group that most immediately fits the label "feature mismatch" and that is the focus of this study. To avoid confusion, I will from now on reserve the terms "deponency" and "deponents" for this class of syntactically active, transitive, and agentive, but morphologically non-active verbs, that is, for mismatch cases. The terms *media tantum* or "middle-only verbs", on the other hand, will be used to refer to both transitive and intransitive verbs that only take middle morphology, but are instances of the canonical use of middle morphology (because they are inchoative, mediopassive, reflexive, etc.).[19] I summarize this proposed distinction in the following table.

[19] One could also use the term *media tantum* to refer to both canonical and non-canonical "middle only" verbs, which is how it is usually used in the literature on the older Indo-European languages. While this pre-theoretical use of the term is descriptively adequate, I will try to avoid it here because I am not primarily interested in whether or not a verb alternates.

Table 8: Distribution of non-active morphology: canonical vs. non-canonical uses of non-active morphology

Canonical		Non-canonical
Oppositional	Non-oppositional	Deponents
anticausative & inchoative, reflexive & reciprocal, self-benefactive, dispositional, (medio)passive	anticausative & inchoative, reflexive & reciprocal, (medio)passive, self-benefactive, stative, (some) denominal & deadjectival verbs, SubjExp verbs, (some) verbs of cognition, (some) verbs of motion	active, transitive, agentive

Note that what distinguishes deponents from canonical middles is not transitivity, since many experiencer verbs in Indo-European take nominative subjects and accusatives objects. It is not agentivity alone, either, since agentive passives regularly take non-active morphology in bivalent voice system. The crucial criterion is having active syntax and an agent surface subject, and this usually implies transitivity. The definition of deponency that I therefore assume is given in (59). Note that this is a "narrow" definition of deponency, as opposed to the "broad" use of the term which refers to non-oppositional middles in general, independent of their argument structure.

(59) Definition of deponency (narrow)

"In an active—non-active voice system, a deponent is a syntactically active verb whose surface subject is an agent and whose finite forms are morphologically non-active."

So far, I have given a *descriptive* account of the canonical uses of non-active voice morphology from a cross-linguistic perspective. I have argued that canonical middles do not have an agent subject, but I have not yet motivated the implicit claim in table 8 that deponents do. In Chapter 3, I show that they differ from canonical middles in the selected languages, and I provide arguments for an analysis of deponents as syntactically active, agentive, transitive

predicates in Chapter 4.

The definition of deponency in (59) specifies that they must be 'syntactically active". The core criteria for this are a nominative, agentive subject and a direct object marked with structural case (accusative). Additional criteria, depending on the language, are 1) the possibility of passivization of deponents, 2) the possibility of agent noun formation from deponents, and 3) the possibility of modification by agent-oriented adverbs. These will be discussed in more detail in Chapter 4.

Under this approach, a feature mismatch verb is a verb that fulfils the definition of deponency in (59).

Note that this move allows us to drastically reduce the object under study. Real mismatch cases are now reduced to the 11% of Zombolou and Alexiadou (2014)'s corpus that are agentive and do not fit into any other established category of middle morphology uses. On the other hand, it means that we have to account for a large class of verbs that are canonical middles and have to find a principled explanation for why all these disparate classes take non-active morphology. This is the topic of the next two sections.

Finally, this proposed distinction between canonical and non-canonical middles raises an important question, as pointed out to me by Sabine Iatridou: can the canonical contexts of non-active morphology in table 8 be understood as a natural class? That is, if they did not take the same morphology in these languages, would we still analyze them as having a certain syntactic feature in common?

The answer is probably no. There is no reason why some languages should choose to group contexts with a non-canonical (non-agent) subject together and mark its presence with special morphology on the verb while others do not, in the same way that there is no *a priori* reason why some languages should have definiteness marking on adjectives while others do not. These are parametric choices that must be understood in terms of the interaction between the invariant syntactic apparatus of the language faculty with the language-specific set of morphosyntactic ϕ-features available in a given language (as well as the often neglected diachronic component). This does not mean that these choices are meaningless—the "voice

syncretism" pattern regularly occurs in language after language and must be constrained by some principle underlying this interaction. A theory that can predict this syncretism from such a general principle, rather than just describe it, would be highly desirable, but I have nothing to contribute to this question at this point.

2.5 Is non-active morphology valency-reducing?

In determining what exactly middle/non-active morphology "does", an important question that needs to be addressed is whether or not it is valency-reducing, either in the lexicon or in the syntax. As we have seen, middle morphology has a variety of different (though cross-linguistically constant) functions, but does it effect a syntactic alternation in the way that the passive is standardly assumed to do, resulting in some form of valency reduction? In the passive, this is usually assumed to be achieved by deleting the external argument and promoting the internal argument to subject position. Passive morphology (like the English past pctp. suffix *-ed/en*, etc.) in mainstream approaches is thought to absorb a thematic role (θ-role) of the verb and is therefore argumental (see, e.g., Baker et al. 1989). When extending such an approach to the middle, it is not immediately clear which θ-role is to be absorbed by middle morphology. In causative alternation verbs like *break, burn, move*, etc., which can be both intransitive and transitive-causative, one could argue that the external argument is deleted (cp. Chierchia 2004's account):

(60) Causative alternation:

a. Sanskrit: *várta-ti* 'turns' (act., tr.) — *várta-te* 'turns' (mid., itr.)

b. Greek: *aíth-ō* 'burn' (act., tr.) — *aítho-mai* 'burn' (mid., itr.)

c. Modern Greek: *tsakiz-o* 'burn' (act., tr.) - *tsakizo-me* 'burn' (non-act., itr.)

This can be formulated as (61):

(61) $[_{vP}\ \mathrm{DP}_{AGENT}\ [_{VP}\ \mathrm{V}_{act}\ \mathrm{DP}_{THEME}\ ]\ ] \rightarrow [_{vP}\ \sout{\mathrm{DP}}_{AGENT}\ [_{VP}\ \mathrm{V}_{mid}\ \mathrm{DP}_{THEME}\ ]\ ]$

"In two-place predicates with an external and an internal argument, middle voice morphology expresses the deletion of the external argument. The result is a one-place predicate."

The subsequent movement of the remaining argument to subject position would then be motivated in terms of the usual mechanisms (nominative case, EPP).

On the other hand, it has been argued that the same morphology in reflexive verbs suppresses the internal argument by identifying its θ-role with that of the external argument. Chierchia (2004) proposes a reflexivization operation R that identifies the two arguments of a transitive verb, thereby creating a reflexive structure λx[wash (x) (x)]. In alternating verbs such as (62), this means that the two θ-roles of a verb like *clean* are effectively identified as one.

(62) Reflexivization:

a. Sanskrit: *punắ-ti* 'cleans' (act., tr.) — *páva-te* 'washes, cleans oneself' (mid.)

b. Greek: *loú-ō* 'wash' (act., tr.) — *loúo-mai* 'wash myself' (mid.)

c. Modern Greek: *hteniz-o* 'comb' (act., tr.) — *htenizo-me* 'comb myself' (non-act.)

This would have to be formulated as (63):

(63) $[_{vP}\ \mathrm{DP}_{AGENT}\ [_{VP}\ \mathrm{V}_{act}\ \mathrm{DP}_{THEME}\ ]\ ] \rightarrow [_{vP}\ \mathrm{DP}_{AGENT}\ [_{VP}\ \mathrm{V}_{mid}\ \sout{\mathrm{DP}}_{THEME}\ ]\ ]$

"In two-place predicates with an external and an internal argument, middle morphology expresses the syntactic deletion of the internal argument. The result is a reading in which the action affects the external argument."

It seems, then, that we would have to say that non-active morphology sometimes deletes the external argument and sometimes the internal one. Furthermore, it is not clear how such an approach would handle transitive middle-marked predicates, like experiencer verbs and the deponents under discussion here, since for these there seems to be no valency reduction. The same holds for self-benefactives, in which there is evidently no valency reduction—if anything,

the opposite. Moreover, a "valency reduction" approach cannot account for non-active morphology on *media tantum* (canonical non-oppositional middles), since these ostensibly do not have an active counterpart from which they could have been derived through θ-role absorption or suppression.

As for oppositional middles, here too there are more reasons to doubt that middle morphology syntactically "absorbs" θ-roles. As mentioned in Section 2.2.1, in the case of causative alternation verbs like in (54), there is evidence that a subset of anticausatives are born as one-place unaccusative predicates, which means that there is no argument reduction in their intransitive, middle-marked variants (Embick 1998, Hale and Keyser 1998, Alexiadou and Anagnostopoulou 2004, etc.).

Moreover, non-active marked verbs in bivalent systems are usually ambiguous between different interpretations. The ambiguity between passive and anticausative readings is well-known and has already been mentioned in Section 2.2.4. Examples are repeated here for convenience.

(64) Modern Greek (from Alexiadou and Doron 2012):

i times miothikan **apo** to diefthindi/**me** tis nees ekseliksis
the prices lowered.NACT by the director/with the new developments

"The prices were lowered by the director/went down because of the new developments"

(65) Modern Albanian (from Kallulli 2007):

Dritar-ja u kris nga presion-i/ Xhon-i/ libr-i
Window-the NONACT crack.AOR.3SG from/by pressure-the John-the book-the

"The window cracked from the pressure/ was cracked by John/the book"

(66) Vedic, RV 7.8.1 (Kulikov 2006):

indhé rā́jā sám ar$_i$yó námobhir
light.up.3SG.PRES.MID king.NOM PRVB noble.NOM reverences.INSTR

"With reverence, the noble king (= the fire) is igniting/is being kindled"

The ambiguity between an episodic passive and generic/dispositional reading has also already been mentioned:

(67) Hebrew (from Alexiadou and Doron 2012):

migdal ayfel lo nir'a mi-šam
tower Eiffel not see.SMPL.MID from-there

"The Eiffel tower was not visible from there/was not seen from there"

(68) Vedic: RV 6.10.4d

śocíṣ-ā dadṛś-e pāvaká-ḥ
glow-INSTR see.perf-3sg.mid pure-NOM

"The pure one is visible by his glow/ is seen through his glow"

Finally, certain non-active marked verbs can be ambiguous between a reflexive and a passive interpretation.

(69) Modern Greek *plithike* 'washed himself/ was washed' (for example, in a hospital)

While one interpretation may be favored over the others depending on context, it is noteworthy that we do not find this kind of ambiguity in the Germanic/Romance type of passives, nor in the passive of trivalent synthetic voice systems. It seems, then, that "passive" is a syntactic operation that targets verbs with a particular argument structure and results in a very particular (and predicable) interpretation, whereas the non-active morphology of bivalent systems has a different status.

Because of these properties of non-active morphology and the problems that a "valency reduction" account of its distribution encounters, David Embick (1997, 1998, 2004a) has termed this phenomenon "voice syncretism": the same morphology is found across syntactically different environments. According to Embick, this can be understood if non-active morphology is assigned post-syntactically "when v is not in a local relationship with an external argument" (1998: 22). This means that voice morphology itself does not cause a syntactic operation, but is assigned as the result of one.

I present this account in more detail in the next section, after giving some background.

2.6 Non-active as a property of *v*P

The general framework that I will use here is based on a line of research following Kratzer (1996), according to whom agent arguments are introduced by a functional category that takes the lexical category V as its complement. The agent argument of a verb like *buy* or *hit* is not an argument of the lexical category V, but is introduced by this functional category. The lexical entry of *buy* according to Kratzer consists only of an event argument and the internal argument x.

(70) λxλe[buy (x)(e)]

That is, "there is an event of buying x". As for the external argument, Kratzer calls the functional category introducing the agent and specifying the event type VoiceP, but *v*P is also used. I will use the latter notation.[20]

Crucially, besides introducing the external argument and providing event semantics, *v* was initially meant to provide a solution to Burzio's generalization, given in (71) (from Woolford 2003):

(71) Burzio's generalization (Burzio 1986: 178):
All and only the verbs that can assign a θ-role to the subject can assign accusative Case to an object. [subject = external subject (agent)]

In other words, in order to have accusative case on the object, you need to have an external argument. The functional projection *v* was intended to provide both. In terms of case, this furthermore introduced a parallelism between having a functional projection that assigns nominative to the subject (T(ense)P) and a separate one for accusative case on the object

[20] But note that *v* is also used to refer to "verbalizing heads", e.g., by Embick (2010) and Harley (2013). I use *v* for the head that determines active/non-active morphology in bivalent systems and V for the lower verbalizing head. Unfortunately, there is no general practice here, but this notation broadly corresponds to Voice-*v* as used by other authors.

(vP).

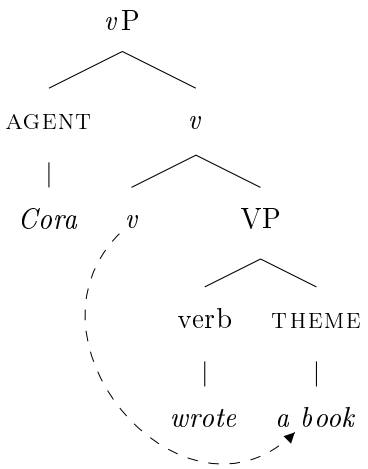
Alexiadou and Anagnostopoulou (2004: 119) summarize the most important properties generally associated with v following Kratzer (1996), which I repeat here with some annotations:

(72)
a. v is the locus of agentivity, i.e., it introduces and licenses agent arguments (= *external arguments*).
b. v bears Case features for the object (i.e., it licenses accusative Case).
c. v bears features related to eventivity.
d. v bears features related to the licensing of a manner component (i.e., manner adverbs, etc.).
e. v comes in two types: one that introduces an external argument, and one that does not.

While v is not explicitly called a "verbalizer" by Kratzer (1996), she does discuss a possible connection between the Aktionsart of a verb and the thematic role of its external argument (p. 122ff.). This point will be taken up again in Chapter 4.

What is important for now is that the agent argument is not an argument of the verb phrase (VP), but of a functional projection vP hierarchically higher than the VP. The VP itself introduces the theme (= *internal argument*). The simplified structure of the transitive clause *Cora wrote a book* is therefore as follows:

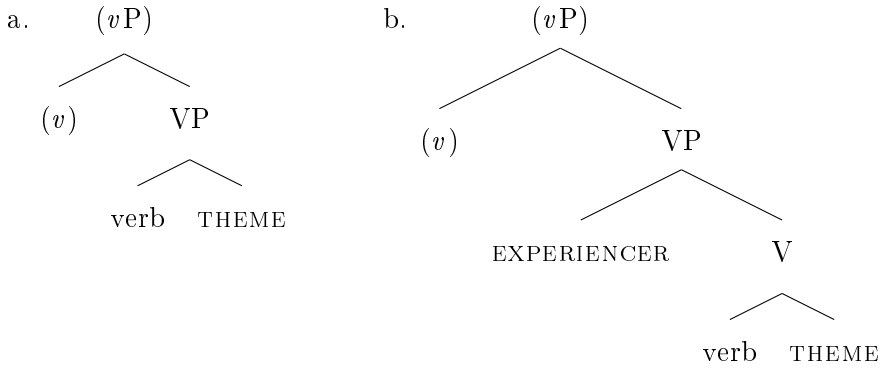
(73)



The arrow indicates that accusative case on *a book* is valued via agreement with v. This tree is simplified—tense and aspect marking on the verb are not determined within the vP, but by the designated functional projections T(ense)P and Asp(ect)P, respectively. The crucial point here is that the canonical agent is introduced in a position *external* to the VP by a functional projection that also determines the event type and (in some approaches) voice and object case.

On the other hand, unaccusative verbs (*arrive, fall, break* (itr.)) and experiencer/psych verbs (specifically SubjExp verbs, cp. Section 2.3.2) are generally agreed to lack an external argument, that is, v does not introduce an agent for these verbs. In the case of unaccusative verbs, only an internal argument is present (74a), which raises to subject position. For experiencer verbs, different structures have been proposed (cp. Belletti and Rizzi 1988, Pesetsky 1995, Arad 1999 for a discussion). Leaving aside the details for now, the experiencer argument is usually thought to originate within the VP (74b), sometimes embedded under a PP. It is crucially *not* introduced by v, so that the v projection could be (and is, sometimes) left out in these verb classes.

(74) Unaccusatives vs. experiencer verbs



The approach to the distribution of voice morphology that I will follow here can be characterized as "post-syntactic" (Embick 1998): voice morphology is a Spell-Out property of vP in different syntactic environments. Embick's approach to the distribution of non-active morphology basically states that non-active voice is assigned whenever vP does not introduce an

agent DP, i.e., in structures like (74). This is captured by his definition of the condition on non-active voice (Embick 1998, 2004a):

(75) $v \leftrightarrow v$-X/_ No external argument (Embick 2004a: 150)

"Non-active voice is assigned when v does not introduce an external argument"

Where "-X" stands for the morphological exponence of "non-active" in a given language. In other words, there is no syntactic feature [NonAct] or the like on v that could trigger non-active voice assignment. Rather, structures are evaluated at Spell-Out and assigned a feature [NonAct] when the relevant syntactic configuration (v does not have an external DP argument or the trace of one) is found (for similar implementations of this idea see Lidz 1999, McGinnis 1999, Kallulli 2007, and 2013).

The Spell-Out condition (75) gives us two environments, one for non-active morphology (vP without an external argument) and one for active morphology (vP with an external argument). In addition, I assume that there is one more environment that always results in the Spell-Out of active morphology, namely selection of a "defective" v head that never projects a specifier and never values accusative case (cp. the change-of-state introducing head vBECOME of Harley 1999 and Alexiadou and Anagnostopoulou 2004; versions of "defective" v are also proposed by Kratzer 1996, Embick 1997, 1998, 2004a, Chomsky 2001, Kallulli 2007, (2013)).

I will discuss this head in more detail in Section 5.2. What is important for now is that this head is never subject to rule (75) because it *never* projects a specifier. There are now two environments in which active morphology is found: a vP with an external argument ("canonical actives", if you will), and a "defective vP" in which active morphology emerges by default (this is motivated in Sections 4.3 and Section 5.2). I will refer to these two heads as v[AG] and v, respectively (following the terminology of Embick 2004a).

This gives us the following basic distribution of voice morphology in a Greek-type voice system (cp. Kallulli 2013: 349):

(76) Distribution of active vs. non-active morphology:

	+ext.arg.	-ext.arg.
v[AG]	ACT	NONACT
v	n/a	ACT

One consequence of this approach is that it predicts that all of the canonical functions of non-active morphology arise from structures that select v[AG] but lack an agent argument *in the right syntactic configuration*. It moreover predicts that accusative case will in principle be available in such structures, which is a desirable result.

I have already introduced the generalization that canonical middles do not have an agentive subject in Sections 2.2 and 2.3. On the surface it seems that the subject of non-active constructions can encompass a variety of different θ-roles. I summarize these in (77):

(77) Subject θ-roles in the canonical functions of non-active constructions:

a. Anticausatives: Theme (*burn, break, turn, move,* etc.)

b. Reflexives: Theme/possessor (e.g., Rooryck and Vanden Wyngaerd 2011) or agent, depending on the analysis (unaccusative/unergative analysis of reflexives), e.g., *hit oneself*, *see oneself*, etc., inherently reflexive verbs: *wash oneself, shave oneself*, etc.

c. Self-benefactives: Benefactive/experiencer (under the analysis presented in Section 2.2.5) or agent

d. Dispositional middles: Theme (*This book sold quickly*, etc.)

e. Mediopassives: Theme (*The book got sold*, etc.)

f. Stative verbs: Holder/possessor (Kratzer 1996) or Theme

g. Experiencer verbs: Experiencer

As is clear from this list, an Embick-style account depends on an unaccusative analysis of reflexives and self-benefactives. Under an unaccusative analysis, the specifier of vP[AG] is not

occupied by an external argument DP in reflexive and self-benefactive predicates and hence fulfils the requirement for the assignment of non-active voice in (76).

Deponents as defined in Section 2.4 also do not fit into the generalization that emerges from (76) because they are agentive. That is, contrary to all the syntactic contexts listed in (77), their surface subject is arguably an agent and should originate in the specifier of vP[AG] in the framework used here, which predicts active morphology.

There are two ways around this problem. The first one is to find a way of incorporating deponents into the canonical functions of non-active morphology. This is the strategy of Alexiadou (2013), Kallulli (2013), and Zombolou and Alexiadou (2014), all of whom argue that the surface subjects of transitive deponents are never agents. Zombolou and Alexiadou (2014) in fact argue that the surface subjects of transitive deponents are always experiencers and hence start out in the VP (cp. (74b)). Since experiencer verbs fall under the canonical function of non-active voice, this analysis allows them to claim that deponency does not represent an instance of feature mismatch and that transitive deponents are simply instances of the canonical functions of non-active voice.

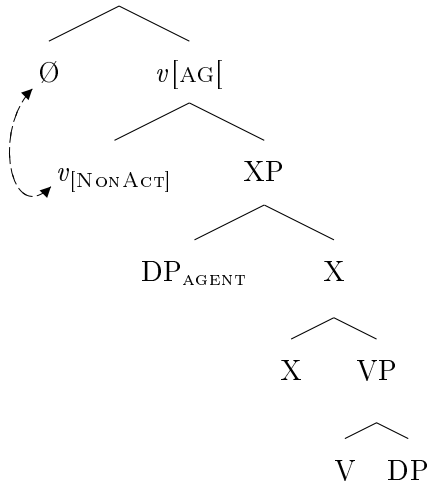
However, their analysis of transitive deponents as psych verbs is not without problems, and I will show in Section 4.2 (based on diagnostics by Anagnostopoulou (1999) and Embick (1997) for Modern Greek) that not all transitive deponents can be analyzed as experiencer verbs. This means that deponents with agent subjects do indeed constitute a case of "feature mismatch".

On the other hand, agentive transitive deponents also pose a problem for Embick's account because they do not fulfil the requirement for the assignment of non-active voice in (75) and (76).

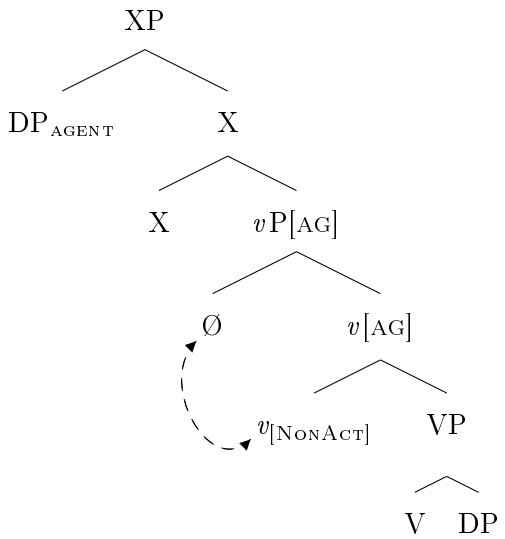
Embick avoids this problem by stipulating that transitive deponents have a *lexical* [NonAct] feature, i.e., they do not acquire this feature in a particular syntactic configuration but are lexically marked as non-active. While I ultimately agree that there must be something about the lexical entry of deponent verbs that triggers their "mismatch" behavior, I argue in Section 4.1 that "[NonAct]" is an inadequate characterization of that feature.

In particular, I want to build on another possible solution inherent in Embick's rule in (75) by arguing that morphological insertion cares about *when* the external argument is introduced in assigning the [NonAct] feature. In such an approach, the lack of an external argument at a particular moment in the Spell-Out cycle would result in the Spell-Out of v[AG] as non-active, *even if* an external argument is introduced elsewhere in the derivation, either below vP[AG], as in (78a), or above it, (78b):

(78) a.



b.



In (78a), v[AG] does not introduce an external argument and hence is spelled out as non-active. Since traces of arguments that are merged below vP[AG] do not count for the purposes of voice morphology assignment, subsequent movement of the agent DP to subject position would not influence the Spell-Out feature [NonAct] on v[AG] (this assumption is independently necessary, since we would otherwise expect that movement of the theme argument of anticausatives and of the experiencer argument of psych verbs to subject position would trigger active morphology, which is evidently not the case). The same holds for (78b), where a functional projection XP introduces an agent DP. Again, this DP cannot influence the feature on v[AG] because it is not in the right structural configuration. In Chapter 4, I argue that agentive deponents can be explained in terms of (78a), in which an agent argument is merged *non-canonically* below vP[AG] . I argue that the functional projection introducing the agent argument is linked to the verbalizing morphology of deponents (VP).

2.7 Summary

In this chapter I have argued that non-active morphology occurs in cross-linguistically similar contexts and can broadly be characterized as marking the lack of an agent subject. I have claimed that deponents fall outside the canonical functions of non-active morphology because they are agentive, and I have started to sketch out possible derivations of canonical vs. non-canonical middles based on Embick's post-syntactic approach to the distribution of voice morphology.

The two analyses outlined so far, namely that of Zombolou and Alexiadou (2014) (all transitive deponents are experiencer verbs) and that of Embick (1997), (1998), (2004a), etc. (at least some transitive deponents are agentive) make different predictions with respect to the behavior of the surface subjects of transitive deponents. The approach of Zombolou and Alexiadou (2014) predicts that they always pattern as experiencer subjects. My own approach, based on that of Embick, predicts that they pattern as agents, like the subjects of active transitive verbs like *hit* or *buy*. This gives us a clear starting point for studying deponent behavior in Indo-European, since both analyses make testable predictions. I discuss these in more detail in Chapters 3 and 4.

Before delving deeper into the syntactic derivation of deponent verbs as outlined in the end of this chapter, I give a descriptive account of the verbal systems of the languages under discussion and their canonical and non-canonical non-active verbs in the next chapter. This serves to outline the empirical background of the discussion and add a more detailed comparative perspective.

Chapter 3

The typology of deponents in Indo-European languages

3.1 Introduction

In this chapter I provide a synchronic description of the morphosyntax of the voice systems of Vedic, Greek, Latin, and Hittite. The aim is to familiarize the reader with the properties of the bivalent voice systems of these languages and to show how deponents fit into them, especially with respect to the difference between finite and non-finite contexts, as well as to outline the microvariation found in these systems.

3.2 Vedic Sanskrit

Vedic Sanskrit is the language of the oldest texts of the Indic branch of the Indo-Iranian language family, the Vedas (Skt. *véda-* 'knowledge'). The Rigveda, a collection of hymns, is the oldest of these and was composed in the Punjab region (Northern India/Pakistan) ca. 1,400-1,100 BCE.

In the following, I give an overview of the Vedic voice system and the syntactic and semantic behavior of Vedic Sanskrit deponents.

3.2.1 The Vedic Voice system

Vedic has a voice opposition between active and middle that is expressed through active vs. middle endings (sometimes in combination with a stem alternation) and cross-cut by the distinction between past and non-past tenses (cp. the paradigms given by Whitney 1879, Macdonell 1910):

Table 9. Vedic active—middle endings (non-past/"present")

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-mi*	*-vas*	*-masi*	*-e*	*-vahe*	*-mahe*
2	*-si*	*-thas*	*-tha*	*-se*	*-ethe*, *-ā́the*	*-dhve*
3	*-ti*	*-tas*	*-nti*	*-te*, *-e*	*-ete*, *-ā́te*	*-nte*, *-re*

The non-past endings (also called "primary" endings) are used in the present, the subjunctive, and the future. The marker *-i* of the active forms marks non-past tense. Synchronically, the difference between present active and present middle can be described as adding *-i* (active) or *-e* (middle) to the inflectional endings. However, Vedic *-e* goes back to an Indo-Iranian diphthong **-ai*, which can be decomposed into an ending **-a* plus the non-past marker *-i*, so that from a diachronic point of view both the present active and the present middle are characterized by the addition of an *-i*.

Past tenses, both perfective (the aorist) and imperfective (the imperfect), take the "secondary" endings:

Table 10. Vedic active—middle endings (past)

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-m*	*-va*	*-ma*	*-i*	*-vahi*	*-mahi*
2	*-s*	*-tam*	*-ta*	*-thās*	*-ethām*, *-āthām*	*-dhvam*
3	*-t*	*-tām*	*-n*	*-ta*, *-a*	*-etām*, *-ātām*	*-nta*, *-ra*

Sound change and remodelling have obscured the connection between primary and secondary endings, but as can be seen from pairs such as 3sg.act. *-t* (secondary): 3sg.act. *-t-i* (primary) or 3sg.mid. *-ta* (secondary): 3sg.mid. *-te* < **-ta-i* (primary), the primary endings are actually derived from the secondary endings by adding the 'non-past' marker *-i*. The secondary endings are used by the aorist, imperfect, pluperfect, optative and subjunctive (the subjunctive vacillates between primary and secondary endings).

Finally, the perfect has a distinct set of endings:

Table 11. Vedic active—middle endings (perfect)

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-a*	*-vá*	*-má*	*-é*	*-váhe*	*-máhe*
2	*-tha*	*-áthur*	*-á*	*-sé*	*-āthe*	*-dhvé*
3	*-a*	*-átur*	*-úr*	*-é*	*-āte*	*-ré*

A comparison between the perfect endings and the primary and secondary middle endings shows a number of similarities (e.g. 3sg.perf.act. *-a* : 3sg.mid. *-a* (secondary); 2sg.perf.act.

-tha : 2sg.mid. *-thās* < **tha-as* (secondary), 3pl.perf. *-úr* (act.)/*-ré* (mid.) : 3pl.mid. *-re* (primary), *-ra* (secondary), etc.). The diachronic explanation for this is that both the middle and the perfect endings go back to the same pre-Proto-Indo-European category (the 'proto-middle', cp. Jasanoff 1978, Jasanoff 2003 and elsewhere).

3.2.2 Classification of Vedic middles

In this section, I give an overview of the Vedic verb classes that only take middle morphology in order to tease apart the canonical from the non-canonical instances.

Traditional Sanskrit grammars distinguish between three types of verb classes with respect to Voice: *ubhayapadin*-verbs that can take both active and middle endings (*ubháya-* 'both'), e.g. *vṛdh* 'grow', *kṛ* 'make', *bhṛ* 'carry', *parasmaipadin*-verbs that only take the active endings, i.e., *activa tantum* (*parasmai* 'for somebody else' (dat.sg), i.e. the action is thought to affect someone/something other than the subject), for example *as* 'be', *ī/ay* 'go', *ad* 'eat', etc., and finally *ātmanepadin*-verbs which always take middle endings (*ātmáne* 'for oneself' (dat.sg)), i.e., *media tantum*. I will refer to these as U-verbs, P-verbs, and Ā-verbs, respectively.

The Indian grammars following the tradition of Pāṇini (ca. 6$^{\text{th}}$ century BCE) give lists of roots (*Dhātupaṭha*) indicating whether they pattern as P-, Ā-, or U-verbs. The following table is based on the *Dhātupaṭha* of Pāṇini and Candra given by Liebich (1922).

Table 12. Sanskrit P-, Ā-, and U-verbs, ca. 500 BCE

	# of roots	%
P	1,038	51.9
Ā	485	24.9
U	478	23.9
Total	2,001	100

Interestingly, U-verbs, i.e., verbs that can take both active and middle inflection, are in a minority compared to *tantum* verbs, both *activa* and *media tantum*. This contrast is even more drastic in the *Dhātupaṭha* of the 13th century grammarian Vopadeva (taken from Stump 2007: 87):

Table 13. Sanskrit P-, Ā-, and U-verbs, ca. 1200 CE

P	68.7 %
Ā	23.4 %
U	7.9 %
Total	2,430 roots

The Vedic roots that pattern as Ā-verbs in the Rigveda can be divided into several subgroups. First, a large number of verbs fall into the classes of canonical use of non-active voice discussed in Chapter 2, namely anticausative/inchoative verbs, naturally reflexive and reciprocal verbs, verbs of motion, verbs of cognition and emotion (psych verbs/experiencer verbs), verbs of emission, and intransitive denominative and deadjectival verbs. While most of these are intransitive, there are also a few transitive ones, mainly experiencer verbs and some denominative/deadjectival verbs. The following list of these is based on my own corpus (hapax legomena are excluded). Note that I follow the general practice in using the bare root (without stem-forming morphology or inflection) as the citation form, rather than the 3sg.

(1) Rigvedic canonical middles

- Anticausative/inchoative verbs: *edh* 'thrive, flourish', *nabh* 'burst', *vidh*/*vindh* 'become empty, lack sth. (+ acc./instr.), *pyā* 'swell', *(ud) śvañc* 'bend', *idh* 'catch fire, ignite' (itr.).

- Reflexive/reciprocal verbs: *niṁs* 'kiss', *(sam) nas* 'unite with', *spṛdh* 'fight, compete',

(pari) svaj 'hug, embrace'.

- Verbs of motion: *ī* 'go quickly', *sac* 'accompany', follow', *īṣ* 'escape, move away from' (abl./acc.); *hā* 'yield before sbdy./sth.' (+ dat./acc.), *ās* 'sit down (on)', *gāh* 'reach, dive in', *dhav* 'stream, run', *pad* 'fall', *prav/plav* 'swim, float', *yād* 'go (to)', *vij* 'flee', *śam* 'busy oneself, work', *tuś* 'hurry (towards)', *īr* 'move sth./move oneself'.

- States: *ās* 'sit', *īś* 'have power over, own', *śī* 'lie', *nādh* 'be in need of help', *(vi, pra) rapś* 'be full (of)',[1] *ramb* 'hang (down)', *vas* 'wear', *śad* 'be distinguished', *sev* 'stay (at)'.

- Experiencer verbs: *(abhí, áva, sám) īkṣ* 'see' (?), *kā* 'love', *kam* 'love, desire' (+ acc. or gen.), *kṣam* 'endure' (+ gen./dat./acc); *man* 'think, consider', *bhī* 'become afraid of', *mṛṣ* 'forget', *hṛ* 'be angry', *bhand* 'be happy', *hṛṣ* 'be happy', *cakṣ* 'appear/look at', *ūh* 'acknowledge, respect; be known as', *pan* 'be admirable/admire', *juṣ* 'enjoy', *mud* 'be happy, rejoice'.

- Verbs of emission (sound, light, etc.) and spontaneous body action: *krap* 'cry, whine', *jṛmbh* 'yawn', *jeh* 'yawn', *tviṣ* 'tremble', *vip* 'tremble', *vyath* 'stumble, stagger', *śiñj* 'buzz, whirr', *smi* 'smile', *svid* 'sweat'.

- Denominative/deadjectival verbs: *taviṣyá-* 'be strong' (*taviṣá-* 'strong'), *panasyá-* 'be worthy of adoration' (**panas-* 'adoration'), *makhasyá-* 'fight' (*-makhas-* 'fight', reciprocal), *mahīyá-* 'be great, magnanimous' (*máhi* 'great'), *vacasya-* 'make oneself heard' (*vácas-* 'speech'), *vīraya* 'act like a hero' (*vīrá-* 'hero'), *vṛṣāyá-* 'act like a bull' (*vṛ́ṣan-* 'bull'), *sumanasyá-* 'be well-disposed (towards)' (*su-mánas-* 'well-disposed'), *svapasyá-* 'be skillful' (*su-ápas-* 'skillful').

On the other hand, there is a small group of non-canonical middles (deponents) with active, agentive syntax and semantics. These are listed in (2).

[1] Originally denominative, see EWA II: 559.

(2) Rigvedic deponents (non-canonical middles)

idh 'kindle, ignite' (tr.), *ījˊ* 'drive, move sth.', *īḍˊ* 'call, praise sbdy.', *kṣad* 'prepare, serve', *gu* 'praise, let resound', *gras* 'devour', *taṃs* 'push, drive, drag', *trā* 'protect, save', *dā/day* 'distribute', *pat* 'rule over, take sth. in one's possession' (+ acc., dat., loc., instr.), *bādh* 'beset, oppress, attack', *maṃh* 'be generous, give, donate to', *rabh/labh* 'seize, take', *vand* 'praise, greet sbdy.', *vas* 'wear clothes, dress in' (?),[2] *sū* 'give birth to'.

These verbs are discussed in detail in Appendix B. Vedic moreover has a small class of agentive denominative verbs that likewise display mismatch behavior according to the criteria given in Chapter 2.

(3) Rigvedic agentive denominative deponents

duchunāyá- 'harm sbdy.' (*duchúnā-* 'harm'), *mantráya-* 'say a *mantra*' (*mántra-* 'song, prayer'),

These are "mismatch verbs": Their syntax and semantics are unexpected given the morphology they take.

3.2.3 Non-finite forms

In Vedic, the mismatch between morphological form and syntactic function continues in the non-finite forms. This is an important observation, since it is occasionally stated in the literature on deponents that their mismatch behavior is suspended in non-finite contexts (i.e., participles, gerunds, absolutive constructions, etc., see Papangeli and Lavidas 2009, Pesetsky 2009). However, this is only true in languages which in general do not express a morphological voice contrast on non-finite verbal forms (e.g., Latin). Vedic, on the other hand, has both an active participial suffix *-ant-* (cp. Lat. *-ēns, -entis*, Gk. *-ont-/-ent-*) and a middle participial suffix *-āna-/-māna-* (cp. the Greek middle participle suffix *-menos*). As expected,

[2] Usually analyzed as stative.

the participles of Ā-verbs always take the middle suffix. The participles of deponents moreover display the same mismatch as the corresponding finite forms: They are transitive, agentive, and take accusative objects, as the following examples illustrate.

(4) *īḍ* 'praise', RV 10.66.14ab:

vasiṣṭhāsaḥ ... vā́cam akrata **devā́m̐**
V.NOM.PL speech.ACC.SG make.3PL.AOR.MID gods.ACC.PL
ī́ḍānā ṛṣivát svastáye
praise.MID.PTCP.NOM.PL Ṛṣi-like.ADV well-being.DAT.SG

"The Vasiṣṭhas have made a speech, praising the gods in the fashion of the Ṛṣis for their well-being."

(5) *dā/day* 'distribute', RV 3.2.11cd:

vaiśvānaráḥ pṛthupā́jā ámartyo **vásu** **rátnā**
Vaiśvānara.NOM broad.shaped.NOM immortal.NOM goods.ACC gifts.ACC
dáyamāno vi dāśúṣe
distributing.MID.PTCP.NOM.SG around worshipper.DAT

"Immortal Vaiśvānara of broad stature, distributing the goods and gifts around for the worshipper."

(6) *bādh* 'oppress, attack, fend off', RV 1.35.3cd:

á devó yāti savitā́ ... **víśvā** **duritā́**
PRVB god.NOM.SG go.3SG.PRES Savitar.NOM.SG all.ACC.PL danger.ACC.SG
bā́dhamānaḥ
fend.off.MID.PTCP.NOM.SG

"The god Savitar is approaching, ... fending off all dangers."

There are occasional exceptions in which a deponent participle (also) has a passive reading. These are discussed in the Appendix.

On the other hand, there are non-finite verbal forms that are underspecified for Voice. These include gerundives made with the suffix *-ya-* (see Whitney (1879: 307ff.), AiG II,2:

789ff.) and verbal adjectives[3] in *-tá-* (or *-ná-*, see Whitney (1879: 310ff.), AiG II,2: 551ff., Jamison (1990)).

Both the gerundive and the verbal adjective have a passive reading with transitive verbs, but an intransitive reading with intransitive verbs.[4] The verbal adjectives of deponents pattern with active transitive verbs in having a passive reading:

(7) Non-deponent verbal adjectives in *-tá-*:

a. *ha-tá-* 'slain' (*han* 'slay')

b. *uk-tá-* 'spoken' (*vac* 'speak')

c. *pī-tá-* 'drunk' (*pā* 'drink')

(8) Deponent verbal adjectives in *-tá-*:

a. *gras-itá-* 'devoured' (*gras* 'devour')

b. *bādh-itá-* 'beset, hemmed in' (*bādh* 'beset')

c. *-lab-dha-* 'taken' (< **labh-ta-*, *labh* 'take, seize')

The same is true for gerundives of deponent verbs, which have the same passive, modal reading ("to be x-ed") as the gerundives of formally active transitive verbs:

(9) Non-deponent gerundives in *-ya-*:

a. *háv-ya-* 'to be called' (*hū* 'call')

b. *véd-ya-* 'worth knowing' (*vid* 'know')

c. *gŕ̥h-ya-* 'to be seized' (*grabh* 'seize')

(10) Deponent gerundives in *-ya-*:

a. *-bā́dh-ya-* 'to be oppressed, hemmed in' (*bādh* 'oppress')

b. *ī́ḍ-ya-* 'to be praised, praiseworthy' (*īḍ* 'praise')

[3]These are also called "past passive participles". However, the periphrastic passive construction based on these participles is a late Vedic/post-Vedic development. On the passive readings of the verbal adjectives and gerunds see Gonda (1951: 9-22), on the *tá*-participles in particular see Jamison (1979) and (1990).

[4]This is sometimes referred to as "ergative" behavior of NOM-ACC languages because the transitive object is grouped together with the intransitive subject, cp. Williams 1987 on this pattern in English.

c. *rábh-ya-* 'to be seized' (*rabh* 'seize, take')

I take this to be evidence that deponent verbs are syntactically active, transitive verbs (more evidence for this is discussed in Section 4.2) that take non-active morphology whenever it is available. The fact that they pattern with morphologically active, transitive verbs in non-finite contexts when distinct non-active morphology is unavailable cannot be taken as evidence that mismatch behavior is caused by finiteness. I discuss the non-finite forms of deponents in detail in Section 5.4.

3.3 Ancient Greek

3.3.1 The Greek Voice system

The Greek verbal system closely resembles the Indo-Iranian one, albeit with a number of innovations. It has the same distinction between past ("secondary") and non-past ("primary") verbal endings, as well as a basically bivalent voice system (active—non-active). The following tables summarize the active and middle indicative endings of Greek (see Rix 1992: 239ff.):

Table 14. Greek active–middle endings (primary)

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-mi*, *-ō*	—	*-men, -mes*	*-mai*	—	*-metha*
2	*-s(i)*, *-eis*	*-ton*	*-te*	*-sai, -ēi*	*-sthon*	*-sthe*
3	*-si, -ti, -ei*	*-ton*	*-asi, -nti, -ousi*	*-tai*	*-sthon*	*-ntai*

Table 15. Greek active–middle endings (secondary)

	Active			Middle		
	Sg.	Dual	Pl.	Sg.	Dual	Pl.
1	*-n, -a*	—	*-men, -mes*	*-mēn*	—	*-metha*
2	*-s*	*-ton*	*-te*	*-so, -ou*	*-sthon*	*-sthe*
3	Ø	*-tēn*	*-n, -an, -san*	*-to*	*-sthēn*	*-nto*

Greek also distinguishes between active and middle in the perfect, which has a separate set of endings with the same past/non-past distinction. The past perfect (= pluperfect) takes the past endings.

Table 16. Greek active—middle endings (perfect)

	Primary/non-past				Secondary/past			
	Active		Middle		Active		Middle	
	Sg.	Pl.	Sg.	Pl.	Sg.	Pl.	Sg.	Pl.
1	*-a*	*-(a)men*	*-mai*	*-metha*	*-n*	*-men*	*-mēn*	*-metha*
2	*-as (-tha)*	*-(a)te*	*-sai*	*-sthe*	*-s*	*-te*	*-ou*	*-sthe*
3	*-e*	*-āsi(n), -anti, -ansi, -ati*	*-Ø*	*-san*	*-tai*	*-ntai, -atai*	*-to*	*-nto*

The functions of middle morphology in alternating contexts correspond to the ones discussed in Section 2.2 above and do not need to be repeated here (detailed discussions of the synchronic functions of middle morphology in Ancient Greek can be found in, e.g., Schwyzer (1939-71: II, 228ff.), Smyth and Messing (1956: 389ff.), Jankuhn (1969), Bakker (1994),

Embick (1997: 229ff.), Allan (2003), etc.).

Greek *media tantum*, both canonical and non-canonical ones, always take the middle endings.

3.3.2 Classification of Greek non-alternating middles

The following is a representative (though not exhaustive) classification of Homeric canonical middles. The biggest classes are verbs of motion, experiencer/psych verbs, and denominative and deadjectival verbs. Many of these combine with preverbs, which can change their valency (e.g., *pétomai* 'fly'—*eis-pétomai* 'fly into', etc.). I have excluded preverbs from this list, except for verbs that only occur with preverbs in the Homeric texts.

(11) Homeric canonical middles

- Reciprocal/reflexive verbs: *mákhomai* 'fight' (dat./acc), *ántomai* 'meet with, approach' (dat./acc.), *pros-ptússomai* 'embrace, hug'.

- Verbs of motion: *hiknéomai* 'arrive at, reach', *hépomai* 'follow, accompany', *orkhéomai* 'dance', *érkhomai* 'come, go (to)', *aléomai* 'avoid, flee', *stratáomai* 'besiege', *pétomai* 'fly', *seúomai* 'rush (at)', *hállomai* 'leap', *dúomai* 'go, dive in', *ep-aláomai* 'wander to', *epi-plázomai* 'drift over', *epi-pōléomai* 'go through, inspect', *oíkhomai* 'go', *meth-ormáomai* 'rush at, assail', *néomai, neũmai*, *níssomai* 'come, go to', *par-ameíbomai* 'pass by', *peri-pélomai* 'go around sth.', *pros-ereúgomai* 'break against' (waves'), *phébo-mai* 'flee (from)'.

- States: *keĩmai* 'lie', *hêmai* 'sit', *dúnamai* 'have strength, be able to, achieve'.

- Experiencer verbs: *aídomai*, *aidéomai* 'be reverent of, fear', *ágamai, agáomai* 'admire', *házomai* 'be in awe of', *atúzomai* 'be bewildered by, amazed at', *bo(ú)lomai* 'wish, will', *(e)éldomai* 'wish (for)', *epístamai* 'understand', *epi-, peri-, sum-phrázomai* 'consider carefully, devise', *thēéomai* 'gaze at', *punthánomai*, *peúthomai* 'hear, learn', *sebázomai*, *sébomai* 'be in awe of, fear', *khőomai* 'be angry at' (acc./dat./gen.).

- Denominative verbs: *ankázomai* 'take into one's arms, embrace' (*ankás* 'in the arms', adv.), *nautíllomai* 'sail' (*nautílos* 'sailor'), *nemesízomai* 'be angry with, fear' (*némesis* 'retribution'), *oinízomai* 'supply oneself with wine' (+ acc., *oînos* 'wine'), *opízomai* 'revere' (*ópis* 'reverence'), *pempázomai* 'count on one's five fingers' (*pémpe* 'five' (Aeol.)).
- Mediopassives: *(epi-)kídnamai* 'be spread all over'.

The following is an exhaustive list of transitive deponents found in Homer's *Iliad* and *Odyssey*, based on Autenrieth (1904)'s Homeric dictionary. I am leaving aside semi-deponents, which will be discussed separately, as well as hapax legomena and alternating verbs that are only deponent in combination with preverbs (e.g., alternating act. *ném-ō* 'deal out, dispense', mid. *némo-mai* 'dispense to oneself; hold' vs. non-alternating *amphi-némomai* 'dwell around', etc.).

(12) Homeric deponents (non-canonical middles)

aínumai 'take, gather (together)', *anaínomai* 'refuse', *arnéomai* 'refuse', *árnumai* 'win, gain', *daíomai* 'distribute, give a share', *datéomai* 'divide, share' *dékhomai* 'receive, take up, accept', *dēléomai* 'hurt, spoil', *díemai, díomai* 'chase off', *dízēmai* 'go, seek', *e(í)romai* 'ask, question', *eréptomai* 'bite off, feed on', *erúomai*, *érūmai*, *rhúomai* 'watch out for, protect, shield'; *eúkhomai* 'praise, pray', *hīláskomai, hīlā́omai* 'appease, reconcile', *íptomai* 'smite, oppress', *kaínumai* 'surpass, vanquish', *kélomai* 'exhort, command', *ktáomai* 'acquire', *líssomai* 'pray, beseech', *maíomai* 'seek, look for', *mḗdomai* 'contrive, devise', *médomai* 'devise', *mémphomai* 'blame, reproach', *mnáomai* 'woo, court', *ónomai* 'scorn', *pénomai, ponéomai* 'tend to, work (hard) at', *sīnomai* 'rob, plunder', *sképtomai* 'look out for' (?), *tī́numai* 'punish, take vengeance', *titúskomai* 'make ready, prepare', *pséudomai* 'lie, deceive'.

See Appendix D for a detailed discussion of these verbs. Agentive denominative verbs are also found:

(13) Homeric agentive denominative deponents

aitiáomai 'accuse, blame' (*aítios* 'responsible'), *gounóomai* 'implore, clasp sbdy.'s knees' (*gónu* 'knee'), *dia-moiráomai* 'portion out' (*moîra* 'portion'), *ergázomai* 'work, perform' (*érgon* 'work'), *lēízomai* 'plunder' (*lēís* 'spoils'), *lōbáomai* 'outrage, spite sbdy.' (*lṓbē* 'outrage'), *manteúomai* 'prophesy' (*mántis* 'prophet'), *mūthéomai* 'relate, tell' (*mũthos*), *homēgurízomai* 'assemble' (tr., *homḗguris* 'assembly'), *tekmaíromai* 'ordain, decree' (*tékmar* 'mark, boundary'), *tektaínomai* 'build, contrive' (*téktōn* 'carpenter'), *huper-hoplízomai* 'furnish, equip' (*hópla* 'tools, weaponry'), *kharízomai* 'bestow, give abundantly' (*kháris* 'grace')

3.3.3 Non-finite forms

Like Sanskrit, Greek distinguishes morphologically between active and middle participles. Active participles are formed with the suffix *-(o/e/a)-nt-*, middle participles with the suffix *-(o/a)-menos*. Both are adjectival and agree with their head noun for number and gender. Like Vedic Sanskrit, Homeric Greek uses these participles in absolute constructions, but not to build periphrastic tenses. Deponents always take the middle participial suffix and behave like the corresponding finite verbs with respect to valency, transitivity, and case:

- *aínumai* 'take, seize' : ptcp. *aínumenos* 'taking', Od.22.498-500:

  hai mèn ár' amphekhéonto kaì ēspázont' Odusêa (...) kaì
  they.F PART PART go.around.3PL.IPF and greet.3PL.IPF Ulysses.ACC and
  ṓmous kheīrás t' aínúmenai
  shoulders.ACC hands.ACC and seizing.F.PL

  "They were thronging around and greeting Ulysses, ... seizing his shoulders and his hands."

- *dízēmai* 'seek sth.' : ptcp. *dizḗmenos* 'seeking', Od.1.261-2:

  ṓikheto gàr kaì keīse thoês epì vēòs Odusseùs **phármakon**
  go.3SG.IPF PART and there swift.GEN on ship.GEN Ulysses.NOM poison.ACC
  androphónon dizḗmenos
  men.slaying.ACC seeking.NOM

'And then Ulysses went into his swift ship, seeking (some) men-slaying poison."

- *tī́numai* 'avenge, punish, chastize' : ptcp. *tīnúmenos*, Od.24.326:

lṓbēn **tīnúmenos** thumalgéa kaì kakà érga
insult.ACC avenging.PRES.PTCP.MID.NOM.SG grievous.ACC and bad.ACC deeds.ACC

" ... avenging (their) grievous insults and bad deeds."

This shows again that finiteness is not the decisive criterion for mismatch behavior.

Greek also inherited the verbal adjective suffix **-tó-* (cp. Vedic *-tá-* above), which was unmarked for Voice (as well as Tense and Aspect, cp. : I, 501ff. Risch 1974: 19ff. on the suffix in Greek). The *tó*-formations to both (non-deponent) active transitive verbs and deponents have a passive reading, e.g.:

(14) *tó*-formations/active transitive verbs:

a. *the-tós* 'placed, set' (*títhēmi* 'place, set')

b. *poiē-tós* 'made' (*poiéō* 'make')

c. *trē-tós* 'pierced, perforated' (*tetraínō* 'pierce')

(15) *tó*-formations/deponents:

a. *éx-ai-tos* 'picked; choice' (*ex-aínumai* 'pick, take out')

b. *mnēs-té* 'wooed one' (f.) (*mnáomai* 'woo, court')

c. *euk-tós* '(thing) prayed for, desired' (*eúkhomai* 'pray')

3.4 Latin

3.4.1 The Latin Voice system

Latin has a bivalent voice system traditionally classified as active—passive. However, passive morphology is also shared by a number of semantically non-passive verbs, both transitive and intransitive. Compared to Greek and Indo-Iranian, Latin has altered its verbal system considerably (although it is more conservative than either in retaining the *r*-endings of the

PIE middle). Latin (and the Italic branch in general) has given up the older tense/aspect stem system in favor of a tense system. The following table summarizes the verbal endings of the present and imperfect indicative (see Leumann 1977: 513f., Weiss 2009: 384ff.) :

Table 17. Latin active—passive endings (present—imperfect)

	Present				Imperfect			
	Active		Passive		Active		Passive	
	Sg.	Pl.	Sg.	Pl.	Sg.	Pl.	Sg.	Pl.
1	*-ō (-m)*	*-mus*	*-or*	*-mur*	*-(b)am*	*-(b)āmus*	*-bar*	*-bāmur*
2	*-s*	*-tis*	*-ris*, *-re*	*-minī*	*-(b)ās*	*-(b)ātis*	*-bāris*, *-bāre*	*-bāminī*
3	*-t*	*-nt*	*-tur*	*-ntur*	*-(b)āt*	*-(b)ant*	*-bātur*	*-bāntur*

Latin furthermore has a synthetic future active (the future passive is periphrastic) and a subjunctive. These stems will be less relevant to the discussion, which is why I do not give their endings here (they are similar to the indicative ones in (15)).

The Latin perfect, however, has played an important role in discussing deponency and the interaction between morphology and syntax more generally. From a diachronic perspective, the Latin (Italic) perfect is a merger of the PIE perfect and aorist. Its notoriety derives from the fact that it is morphologically defective in having only active endings, while the corresponding perfect passive is a periphrastic category made from the auxiliary *esse* 'be' plus the perfect participle. The following table summarizes the active endings of the perfect/pluperfect.

Table 18. Latin perfect & pluperfect active endings

	Perfect		Pluperfect	
	Sg.	Pl.	Sg.	Pl.
1	*-ī*	*-imus*	*-eram*	*-erāmus*
2	*-istī*	*-istis*	*-erās*	*-erātis*
3	*-it*	*-ērunt, -ēre*	*-erat*	*-erant*

In other words, an alternating verb in Latin has a synthetic present active and passive, a synthetic perfect active, but a periphrastic perfect passive. A non-alternating or deponent verb only has a synthetic present, but a periphrastic perfect. This is exemplified in the following table.

Table 19. Latin alternating vs. deponent verbs: the basic paradigm

	Pres.act.	Pres.pass.	Perf.act.	Perf.pass.
Alternating	am-ō 'I love'	am-or 'I am (being) loved'	amāv-ī 'I loved'	amatus sum 'I was loved'
Deponent		sequ-or 'I follow'		secutus sum 'I followed'

The perfect of deponent verbs has the same active, transitive syntax as the synthetic present and assigns accusative case, e.g.:

(16) *apīscor* 'attain, seize', perf. *aptus sum* '(have) attained', Plautus, *Captivi* 775:

sine	sacris	**hereditatem**	**sum**
without	incumbrances.ABL	inheritance.ACC	be.AUX.1SG.PRES
aptus		effertissimam	
attained.PERF.PTCP.NOM.SG		amplest.ACC	

"Without incumbrances, I have gained the amplest inheritance."

(17) *com-minīscor* 'invent, devise', perf. *commentus sum* '(have) devised': Plautus, *Truculentus* 85:

eo nunc **commenta** **est** **dolum**
for.this now devised.PTCP.PERF.NOM.SG.F be.AUX.3SG.PRES deceit.ACC

"For this reason she has now devised this deceit"

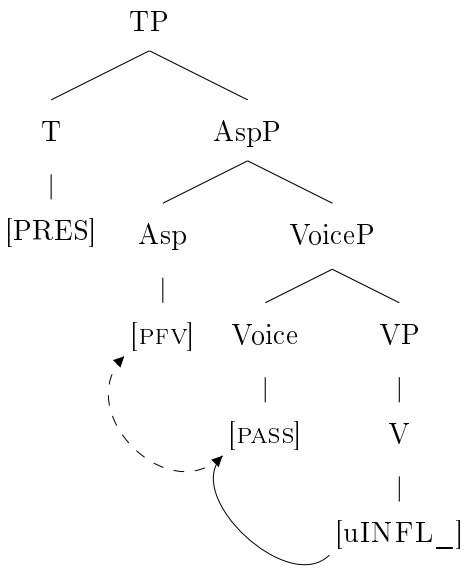
(18) *loquor* 'speak, say', perf. *locutus sum* '(have) said': Plautus, *Trinummus* 563:

quid hic **est** **locutus** tecum?
what.N this.M be.AUX.3SG.PRES said.PERF.PTCP.NOM.SG.M you.with

"What did he discuss with you?"

The Latin perfect is discussed in detail by Embick (2000) (see Embick 1997: 226ff., see Sadler and Spencer 2001 and Kiparsky 2005 for a different analyses) who argues that the periphrastic perfect is the result of lack of verb movement to T. Building on this approach, Bjorkman (2011) describes this as "overflow" pattern which occurs when agreement features are stranded. In the case of the Latin perfect passive, the verb can move to Voice, where it can agree with the [PFV] feature on Asp, but the [PASS] feature on Voice prevents it from moving higher up. The marked feature [PFV] on Asp acts as an intervenor, so the verb cannot agree for tense and the interpretable feature [PRES] on T is stranded. Bjorkman argues that auxiliaries are used to pick up such stranded features, effectively acting as a repair strategy.

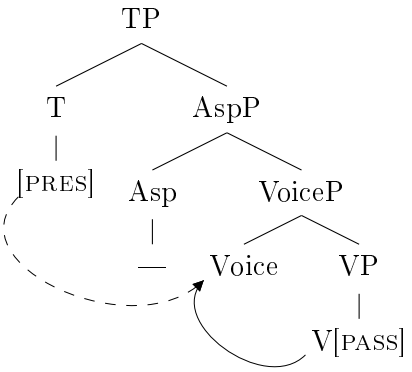
(19) Latin perfect passive: *consumptum est* 'was consumed':



Bjorkman furthermore argues that feature valuation proceeds via upwards agreement of the verb with interpretable features on functional heads ("Reverse Agree", e.g., Wurmbrand 2012, Zeijlstra 2012), rather than the other way around ("Standard Agree", e.g., Chomsky 2001).

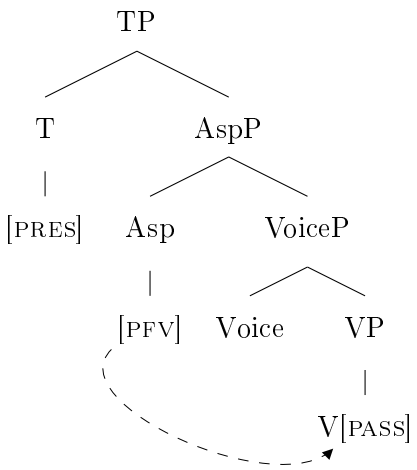
As for deponents, Embick (1998), (2000), and Bjorkman (2011) both assume that they are inherently specified for passive voice through a diacritic [PASS] (they use [PASS] instead of [NONACT] because they both focus on Latin, but note that this stands for the non-active morphology of a bivalent synthetic voice system). Bjorkman (2011: 75f) argues that this results in a synthetic form in deponent presents because the feature on Asp is unmarked (imperfective), and T can agree directly with the verb which has moved to Voice:

(20) Deponent *sequor* 'follow':



In the perfect of a deponent, however, the same clash as in (19) occurs, but this time the [PASS] feature causing the problem (by preventing verb movement to Asp) originates on V rather than on Voice.

(21) Deponent perfect *secutus est* 'followed'



Asp agrees directly with V, but there is no Voice-to-Asp-movement, so the perfective feature on Asp acts as an intervenor.

I follow Bjorkman (2011)'s account of periphrastic constructions, but disagree on the nature of the lexical feature that triggers deponent behavior. I argue in Section 4.1 that this cannot be [PASS] or [NONACT]. Note that operating with such a feature on deponents does not predict why deponents are not found in languages that *only* have periphrastic passives. I provide an alternative to a feature [PASS] on deponents in Sections 4.3 and 5.3, where I argue that Bjorkman's approach can be used to predict why we do not find deponents in English-type languages.

3.4.2 Classification of Latin non-active-only verbs

In (22), I list the Latin verbs which always take non-active morphology and (because of their syntax and semantics) can be considered canonical. I concentrate on the Old Latin (OL) period (3rd-2nd century BCE, see Weiss 2009: 23f.). This list is based on Flobert (1975)'s collection of Latin deponent/*media tantum* verbs (cp. also Claflin 1927, Baldi 1977, Xu et al.

2007). The main sources are Plautus, Ennius, and Naevius. As before, I leave out hapax legomena, I also do not list the combination with preverbs unless the simplex is unattested or they change the verb class of a given verb.

(22) Latin canonical non-active verbs

- Anticausative/inchoative verbs: *morior* 'die', *orior* 'rise, be born', *dēfetīscor* 'become tired', *expergīscor* 'wake up', *īrāscor* 'become angry', *impliciscor* 'become confused', *nāscor* 'be born', *ōrdior* 'set out, begin to' (also tr.).

- Reflexive/reciprocal verbs: *amplector*, *amplexor*, *circumplector*, *complector* 'embrace', *aemulor* 'rival, vie with', *congredior* 'meet with'.

- Verbs of motion: *gradior* 'walk', *lābor* 'glide, slip', *proficiscor* 'start out', *grassor* 'go, move'.

- States: *nītor* 'lean (on)'.

- Experiencer verbs: *adsentor* 'agree with' (dat.), *cōnspicor* 'see, perceive', *experior* 'experience, undergo'; *frūnīscor* 'enjoy', *fruor* 'enjoy' (acc./abl.), *obliviscor* 'forget', *loquitor* 'speak badly of' (dat.), *opīnor* 'believe, think', *patior* 'suffer, endure', *reor* 'reckon, believe', *vereor* 'fear, revere'.

- Denominative verbs: *adversor* 'disagree with' (+ dat., *adversus* 'turned against, opposed to'), *arbitror* 'observe, witness' (?) (*arbiter* 'witness'), *(h)ariolor* 'foretell, prophesy' (itr., *hariolus* 'prophet'), *bacchor* 'celebrate the festival of Bacchus', *blandior* 'flatter' (*blandus* 'flattering'), *commentor* 'study, think about' (?) (*commentum* 'fiction, invention'), *grātulor* 'rejoice, wish joy to' (**grāti-tulos* 'bringing thanks'[5]), *laetor* 'be glad' (*laetus* 'glad'), *lustror* 'frequent brothels' (*lustrum* 'brothel'), *mīror* 'admire' (*mīrus* 'astonishing'), *moderor* 'set bounds, moderate' (+ dat., *modus* 'measure, bound'), *morror* 'wait, tarry' (also tr. 'delay', *mora* 'delay'), *nūgor* 'talk nonsense' (*nūgae* 'non-

[5]See LEW: I, 619, Flobert (1975: 85ff.)

sense, jests'), *odoror* 'smell' (*odor* 'smell'), *opitulor* 'aid, bring help' (*opi-tulus* 'bringing help'), *ōsculor* 'kiss' (*ōsculum* 'kiss'), *parasītor* 'act like a parasite' (*parasītus* 'parasite'), *pergraecor* 'live in a Greek manner' (*graecus* 'Greek'), *philosophor* 'act like a philosopher' (*philosophus* 'philosopher'), *piscor* 'to fish' (*piscis* 'fish'), *potior* 'become master of, obtain' (*potis* 'able'), *praestōlor* 'expect, wait for' (*praestō* 'ready, present'), *precor* 'beg, plead' (+ dat., *prex* 'prayer, request'), *recordor* 'remember' (*cor*, gen. *cordis* 'heart'), *scortor* 'frequent prostitutes' (*scortum* 'skin; prostitute'), *sȳcophantor* 'trick sbdy.' (*sȳchophanta* 'slanderer'), *veneror* 'revere' (*venus* 'love, charm').

As expected, Latin also has agentive *media tantum* that can be considered mismatch verbs. The following list is exhaustive for the defined period (hapax legomena are not listed).

(23) Latin deponents (non-canonical non-active verbs)

adipīscor 'obtain', *apīscor* 'reach, attain', *a-spernor* 'despise', *caluor* 'deceive', *comminīscor* 'imagine, invent', *cōnfiteor* 'grant, concede', *cōnor* 'attempt, try', *dēspicor* 'despise, disdain', *fateor* 'confess, acknowledge', *for* 'speak, say' (*effor* 'speak out', *profor* 'declare'), *fungor* 'perform, execute', *hortor* 'exhort, command', *imitor* 'imitate', *indipīscor* 'seize', *īnfitior* 'deny', *(pol)licitor* 'offer, bid', *loquor* 'speak, say', *meditor* 'think, reflect on' (?), *minitor* 'threaten', *nancīscor* 'obtain, find', *opperior* 'wait for, attend', *polliceor* 'promise, offer', *profiteor* 'declare', *queror* 'lament, bewail', *sector* 'follow', *sequor* 'follow', *sōlor* 'console, comfort', *suspicor* 'suspect', *tueor* 'protect, watch', *tūtor* 'protect', *ulcīscor* 'punish, take revenge', *ūtor* 'use', *vēnor* 'chase, hunt'.

These verbs are discussed in Appendix E. Latin also has a number of denominative agentive deponents:

(24) Latin denominative deponents

(cōn)-fābulor 'speak, chat', (*fabula* 'tale') *fūror* 'steal' (*fūr* 'thief'), *frūstror* 'deceive' (*frūstra* 'in error'), *interpretor* 'explain' (*interpres* 'intermediary'), *largior* 'bestow,

distribute' (*largus* 'abundant'), *lūdi-fīcor* 'make fun of, mock',[6] *māchinor* 'contrive, design' (*māchina* 'contraption, engine'), *medicor* 'cure, heal' (tr., *medicus* 'doctor'), *minor* 'threaten' (*minae* 'threats'), *miseror* 'lament, commiserate' (*miser* 'wretched'), *molior* 'endeavor, undertake' (*mōlēs* 'toil, labor), *percontor* 'question, explore' (*contus* 'boat hook' (see Appendix E)), *perīclitor* 'try, test' (*perīculum* 'test, attempt'), *speculor* 'spy out, explore' (*specula* 'watchtower'), *stipulor* 'bargain, stipulate' (*stipula* 'stalk, halm'), *testor* 'call as witness' (*testis* 'witness'), *vador* 'bind by bail' (*vas* 'bail').

3.4.3 Non-finite forms

While Sanskrit and Greek have non-finite verbal forms that morphologically distinguish between active and middle, Latin famously does not. That is, descriptively Latin has only one participial suffix for each the present and the perfect: The present participle suffix *-(e/o)nt-* (om.sg. *-ns*; Skt. *-(a)nt-*, Gk. *-e/o/ant-*; Leumann 1977: 582ff.) and the perfect participle nom.sg. *-tus* (Skt. *-tá-*, Gk. *-tó-*; cp. Brugmann 1895, Leumann 1977: 611ff.). The following table summarizes the distribution of these non-finite forms for deponents and non-deponents:

Table 20. Latin non-finite forms

	Present			Perfect		
	Pres.act.	Pres.pass.	Pres.ptcp.	Perf.act.	Perf.pass.	Perf.ptcp.
Altern.	*am-ō*	*am-or*	***amā-ns***	*am-āv-ī*	*amātus sum*	***amātus***
	'I love'	'I am loved'	'loving'	'I have loved'	'I was loved'	'having loved'
Dep.		*sequ-or*	***sequē-ns***		*secūtus sum*	***secūtus***
		'I follow'	'following'		'I have followed'	'having followed'

Because the present participle usually has an active reading, it seems as if the participle

[6] Also passive in Plautus.

of the deponent verb *sequor* uses the same *active* participial suffix as the active verb *amō*. However, while the present participle is usually classified as active and the perfect participle as passive, a more accurate description would be to say that they are underspecified for voice. The present participle, for example, can occasionally have a non-active reading (examples from Leumann 1977: 583):

(25) a. *vert-ō* 'turn' (tr.) : *vert-or* 'turn' (itr.), pres.ptcp. *vertēns* 'turning' (tr./itr.)
b. *volv-ō* 'roll' (tr.) : *volv-or* 'roll' (itr.), pres.ptcp. *volvēns* 'rolling' (tr./itr.)
c. *līqui-or* 'become fluid, melt', ptcp. *līquēns* 'fluid' (vs. later *liqu-ō* 'make fluid, melt (tr.))

The perfect passive participle of alternating or formally active verbs, on the other hand, occasionally (though rarely) has an active reading (Leumann 1977: 61f., Weiss 2009: 437):

(26) a. *cēnō* 'dine' : *cēnātus* 'having dined'
b. *iūrō* 'swear' : *iūrātus* 'having sworn'
c. [*pōto*] 'drink' : *pōtus* 'having drunk'

Moreover, it has been argued that the perfect participle is not necessarily "perfective" and does not always behave like a past participle. Brugmann (1895: 100ff.) cites a number of examples in which a Latin *tus*-participle behaves like a present participle, either active, as in (27a-b), or passive, as in (27c) (see also Embick (2000: 219ff.) and Weiss (2009: 437 and fn. 45) on this observation):

(27) a. *confīdō* 'trust' : *confisus* 'trusting'
b. *taceō* 'am silent' : *tacitus* 'silent'
c. *laudō* 'praise' : *laudātus* 'being praised'

I will come back to these formations in Section 5.4. The important point for now is that the fact that both the alternating verb *amō* and the deponent verb *sequor* use the same suffix to form their (syntactically active) present participle cannot be taken as evidence that the mismatch breaks down in non-finite contexts, because there is no other suffix available in the

Latin present paradigm.

3.5 Hittite

Hittite belongs to the Anatolian branch of Indo-European and was spoken in the second millennium BCE in today's Turkey and Syria. The textual transmission mainly consists of clay tablets written in a variant of the Old-Assyrian cuneiform syllabary and dating from the mid-17$^{\text{th}}$ to the mid-12$^{\text{th}}$ century BCE.

3.5.1 The Hittite Voice system

Typologically, the Hittite verbal system is closer to that of Latin than that of Vedic and Ancient Greek. It also has a bivalent (active—non-active) voice system, and distinguishes between past (= preterit) and non-past (= present).[7] As in Greek and Indo-Iranian, there are traces of an emergent trivalent system, since Hittite has a periphrastic passive construction consisting of the present participle (formed with the suffix *-ant-*) plus the auxiliary *ēš/aš* 'be'.

The following table summarizes the active and non-active indicative endings of Hittite (see Hoffner and Melchert 2008):

Table 21. Hittite active—non-active endings (present)

	Active		Non-act.	
	Sg.	Pl.	Sg.	Pl.
1	*-mi*; *-ḫi*	*-meni, -weni*	*-(ḫ)ḫa(ri), -ḫaḫari*	*-wašta(ti)*
2	*-ši*; *-ti*	*-teni*; *-(š)teni*	*-ta(ri/ti)*	*-t/duma(ri)*
3	*-zi*; *-i*	*-anzi*	*-a(ri), -ta(ri)*	*-anta(ri)*

[7] The Hittite non-active endings are usually referred to as "mediopassive", but for the reasons discussed in Chapter 1 I avoid this term in the following discussion.

The distribution of the optional marker *-ri* (or *-ti*) of the non-active endings is discussed extensively by Yoshida (1990) (see also Hoffner and Melchert 2008: 233), but will not be relevant for our purposes.

Table 22. Hittite active–non-active endings (preterit)

	Active		Non-act.	
	Sg.	Pl.	Sg.	Pl.
1	*-(n)un*; *-ḫun*	*-wen, -men*	*-ḫat(i)*, *-ḫaḫat(i)*	*-waštat(i)*
2	*-š*; *-(š)ta*	*-ten*; *-(š)ten*	*-at*, *-tat(i)*	*-d/tumat*
3	*-t*; *-š, -ta*	*-er*	*-at(i), -tat(i)*	*-antat(i)*

3.5.2 Classification of Hittite non-active-only verbs

The following verbs exclusively take non-active morphology, but can be considered canonical because of their syntax and meaning (this and the following list are based on Melchert 2012's classification of Hittite non-active verbs, which he has kindly shared with me). I focus on Old Hittite (OH, 1650–1450 BCE, see Kloekhorst 2008: 3f. for the periodization of Hittite texts). The list of *media tantum* is exemplary rather than exhaustive, but note that in general the Hittite corpus of verbal forms is smaller than that of, e.g., Latin.

(28) Hittite canonical *media tantum*

- Anticausative/inchoative verbs: *āri* 'becomes hot', *ištuwari* 'becomes known', *kiša(ri)* 'happens, becomes', *kikištari* 'happens', *kištari* 'is extinguished', *lēlaniyatta(ri)* 'becomes angry', *urāni* 'burns', *zē(y)a(ri)* 'becomes cooked', *šup((a)tt)ari* 'goes to sleep'.
- States: *dukka(ri)* 'is visible', *kitta(ri)* 'lies', *arta(ri)* 'stands', *mūriyatta* 'crouches', *tarratta(ri)* 'is strong, able', *wēšta* 'wears'.

- Verbs of motion: *ēša(ri)* 'sits down (on)', *ietta*, *iyatta(ri)* 'go', *ḫaikta(ri)*, *ḫinka(ri)*, *ḫinkatta(ri)* 'bows', *ḫaliya(ri)* 'bows, kneels', *šalikari* 'touches, invades, reaches'.
- Verbs of emission: *tiṯḫa* 'thunders'.
- Denominatives: *āššša(ri)*, *āššiyatta(ri)* 'is good' (*āššu-* 'good'), *parkuyatta(ri)* 'becomes clean' (*parkui-* 'clean, pure'), *šallatta(ri)*, *šalliyatta(ri)* 'spreads out, becomes big' (*šalli-* 'big'), *zaḫḫiyatta(ri)* 'fights' (*zaḫḫai-* 'fight')

(29) Hittite deponents (non-canonical non-active verbs)
arka(ri) 'mounts sexually', *ḫanna(ri)* 'contests at law, sues', *ḫatta(ri)* 'slits; sacrifices', *ḫuett(i)a(ri)* 'plucks, pulls', *iškalla(ri)* 'tears, slits', *paḫša(ri)* 'protects', *paršiya(ri)* 'breaks', *tuḫša(ri)* 'cuts off', *šarratta(ri)* 'transgresses, breaks (an oath)', *wešiyatta(ri)* 'grazes' (itr./tr.).

See Appendix A for a discussion of these verbs.

3.5.3 Non-finite forms

Like Latin, Hittite does not have a morphological voice distinction in its non-finite formations. The participle in *-ant-* behaves syntactically much like the verbal adjectives in *-tá-* and *-tó-* in Vedic and Greek: It has a passive reading when made to transitive verbs,[8] and an intransitive, stative reading when made to intransitive verbs (Hoffner and Melchert 2008: 339ff.):

(30) Intransitive *ant*-participles:
a. *akkant-* 'having died, dead' (*āk-/akk-* 'die')
b. *uwant-* 'having come' (*we-/uwa-* 'come')
c. *arant-* 'standing' (*ar-* 'stand')

[8]Hoffner and Melchert 2008: 339 also note that there are a few cases in which the participles of transitive verbs have an active reading, e.g., *šekkant* 'knowing' (*šākk-/šakk-* 'know'), *ištamaššant-* 'hearing' (*ištamašš-* 'hear'), *adant-* 'having eaten' (*ed-/ad-* 'eat').

(31) Transitive *ant*-participles:

a. *appant-* 'seized, taken' (*epp-/app-* 'seize')

b. *piyant-* 'given' (*pai-/pi-* 'give')

c. *taruppant-* 'assembled' (*tarupp-* 'collect, assemble')

The participles of deponents pattern with regular transitive verbs and have a passive reading:

(32) Deponent *ant*-participles:

a. *paršiyant-* 'broken' (*parš(i)-* 'break')

b. *ḫuettiant-* 'pulled' (*ḫuett(i)-* 'pluck, pull')

c. *tuḫšant-* 'cut off' (*tuḫš-* 'cut off')

3.6 Modern Greek

3.6.1 The Modern Greek Voice system

In order to compare the behavior of the non-informant bivalent voice systems with that of a contemporary language, I briefly discuss the Modern Greek voice system and its deponents here.

The Modern Greek voice system is remarkably similar to that of Ancient Greek and the other Indo-European languages discussed in this chapter, although it has branched out in terms of periphrastic constructions. Modern Greek distinguishes between perfective and imperfective aspect, non-past, past, and future tense, and active vs. non-active voice. It also has a periphrastic perfect that likewise distinguishes between non-past, past, and future tense.

In the following tables, I summarize the active and non-active endings of Modern Greek. I deviate from the format of the previous section, where I have grouped the endings according to non-past and past, since Modern Greek has more distinctions in the non-active than in the active endings (see Holton et al. 1997: 113ff. on voice distinctions in the verbal endings in Modern Greek, for recent theoretical discussions of Modern Greek voice morphology see Embick 1997: 207ff., Embick 1998, Merchant To appear).

Table 23. Modern Greek active—non-active endings

	Active		Non-active			
	Non-past	Past	Non-past		Past	
	ipf./pfv.	ipfv./pfv.	ipfv.	pfv.	ipfv.	pfv.
1sg.	*-o*	*-a*	*-ome*	*-o*	*-omun*	*-ika*
2sg.	*-is*	*-es*	*-ese*	*-is*	*-osun*	*-ikes*
3sg.	*-i*	*-e*	*-ete*	*-i*	*-otan*	*-ike*
1pl.	*-ume*	*-ame*	*-omaste*	*-ume*	*-omastan*	*-ikame*
2pl.	*-ete*	*-ate*	*-este*	*-ite*	*-osastan*	*-ikate*
3pl.	*-un*	*-an*	*-onde*	*-un*	*-ondan*	*-ikan*

Greek deponents and non-oppositional middles take the non-active endings.

The periphrastic perfect is formed using the (formally active) auxiliary *eho* 'have' plus the invariant infinitive ("non-finite") form of the verb, which is identical to the 3sg. non-past perfective (Holton et al. 1997: 112f.). Alternating verbs make both an active and a non-active perfect; the perfect active uses *eho* plus the 3sg. non-past perfective active form, the perfect non-active uses *eho* together with the 3sg. non-past perfective non-active form.

Deponents show mismatch behavior in the periphrastic perfect in that they are formally non-active, but syntactically active, exactly like the Latin periphrastic perfect of deponents. That is, they take the non-active "infinitive" rather than the active one.

Table 24. Modern Greek: deponent vs. non-deponent perfects

	Alternating verb: *deno* 'tie'		Deponent verb: *dehome* 'accept'	
	non-past pfv.	perf.	non-past pfv.	perf.
3sg.active	*desi* 'tied'	*ehi desi* 'has tied'	—	—
3sg.non-active	*dethi* 'was tied'	*ehi dethi* 'has been tied'	*dehthi* 'accepted'	*ehi dehthi* 'has accepted'

The periphrastic perfect of deponents is active and transitive, exactly like the corresponding synthetic forms, cp. (33a). A passive interpretation of deponent perfects is impossible ((33b), both examples from Papangeli and Lavidas 2009: 203).

(33) Deponent verb *ekmetalevome* 'exploit':

a. I Maria ehi ekmetalef-thi oles tis katastasis
The.NOM Maria.NOM has exploit-3SG.NON-PAST.PFV.NONACT all.ACC the.ACC situations.ACC
"Maria has exploited all situations"

b. *I katastasis ehun ekmetalef-thi
The.NOM situations.NOM have exploit-3SG.NON-PAST.PFV.NONACT
Intended: "The situations have been exploited"

3.6.2 Classification of Modern Greek non-active-only verbs

Since Zombolou and Alexiadou (2014) provide a detailed study dedicated of Modern Greek middle-only verbs, I restrict myself to briefly summarizing their main findings here. It must be stressed again that they define deponents as verbs that take only non-active morphology, 89% of which fall into one of the canonical functions discussed in Chapter 2. These are summarized in the following table.

Table 25. Canonical *media tantum* in Modern Greek

Classification	%	Examples
Reflexives/reciprocals	33%	*aftoeksipiretume* 'serve oneself', *alilo-eksipiretume* 'serve one another', *stithodernome* 'hit oneself in the chest'
Anticausatives/Change of state	19%	*ekrignime* 'explode', *marenome* 'wilt', *enilikionome* 'become an adult'
Cognitive/psych verbs	13%	*fovame* 'fear', *esthanome* 'feel', *gevome* 'taste'
Unaccusatives	9%	*erhome* 'come', *afiknume* 'arrive'
(Medio)passives	8%	*itome* 'be defeated', *iliokeome* 'be burnt by the sun', *androkratume* 'be dominated by men'
Statives	7%	*ironevome* 'be ironic', *ime* 'be', *dikeume* 'have the right to', *tsigunevome* 'be stingy'

The remaining 11% are transitive, syntactically active verbs that do not fit any of the above categories and are mismatch verbs/deponents according to the definition in Section 2.4. Taken together, middle-only verbs in Modern Greek make up 1,348 verbs out of the ca. 5,500 verbs in Zombolou and Alexiadou (2014)'s corpus, or 24.5%. This corresponds remarkably well to the numbers given in Section 3.2.2 above based on the corpora of the Sanskrit grammarians of antiquity, where 485 out of 2,001 roots, or 24.9%, were classified as middle-only verbs. Even taking into account the caveats in both cases (the Sanskrit *Dhātupaṭha*s contain occasional forms that are never encountered outside the grammatical literature, the Greek corpus contains forms which for some speakers have active counterparts or which some speakers consider obsolete, like *kime* 'lie'), this is a remarkable convergence. It is clear that non-alternating behavior is a stable component of bivalent synthetic voice systems.

As for the mismatch verbs, I list examples of this class in (34); verbs with a question mark

may not have to be classified as mismatch verbs.

(34) Modern Greek deponents

eborevome 'trade', *hirizome* 'use, manipulate', *metahirizome* 'handle, use', *diahirizome* 'handle', *epihirizome* 'undertake', *epititheme* 'attack', *arnume* 'deny', *dehome* 'accept', *diigume* 'tell (a story)', *egiome* 'guarantee', *ekdikume* 'take revenge on', *ensternizome* 'embrace, espouse (an idea)', *epagelome* 'promise', *episkeftome* 'visit', *katarieme* 'curse', *katahrome* 'abuse', *mimume* 'mimic, imitate', *oramatizome* 'envision' (?), *paretume* 'quit, relinquish, forgo', *sakulevome* 'suspect' (?), *skarfizome* 'contrive, devise', *skeptome/ skeftome* 'rationalize, ponder, think about' (?), *sfeterizome* 'take over, take into possession', *iperaspizome* 'defend', *ipoptevome* 'suspect', *iposhome* 'promise', *ipopsiazome* 'suspect', *hriazome* 'need'.

There are a few borderline cases that are syntactically agentive and transitive and are usually classified as deponents, but which are semantically interpretable as inherently self-benefactive verbs (e.g., *ekmetalevome* 'exploit, benefit', *karponome* 'appropriate', *kapilevome* 'exploit, use').[9] However, there seems to be some variation in whether or not speakers perceive these as self-benefactives.

Although Alexiadou 2013 and Zombolou and Alexiadou (2014) have recently argued that all of (34) should be analyzed as experiencer verbs, this is at least synchronically impossible, since these verbs pattern as transitive verbs with an agent argument with respect to the relevant tests. I discuss the evidence for this in Section 4.2.

3.6.3 Non-finite forms

Greek has three non-finite formations that are relevant here: the gerund or present active participle in *-ondas*, the perfect non-active participle in *-menos* and a verbal adjective in *-tos* (on MG participles see Holton et al. 1997: 234ff., Embick 1997: 134ff., Anagnostopoulou

[9] Despina Oikonomou, p.c.

2003, Alexiadou and Anagnostopoulou 2008, Papangeli and Lavidas 2009).[10] The first one is invariant while the other two inflect for case, number, and gender like adjectives. They also pattern together in being syntactically "passive", that is, oriented towards the object of transitive verbs. The gerund, on the other hand, is syntactially active and has been described as "subject-controlled" (Holton et al. 1997: 235).

The *-menos* and *-tos* participles have a similar surface syntax and interpretation, as the following examples (from Alexiadou and Anagnostopoulou 2008 and Anagnostopoulou 2014) show:

Table 26. *-menos* vs. *-tos* participles

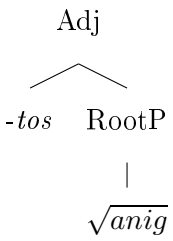
Verb	*-menos*	*-tos*	
vrazo	*vras-menos*	*vras-tos*	'boiled'
psino	*psi-menos*	*psi-tos*	'grilled'
anigo	*anig-menos*	*anih-tos*	'opened; open'
klino	*klis-menos*	*klis-tos*	'closed"

However, Anagnostopoulou 2003 has argued that they differ in that *-menos* has event implications, whereas *-tos* does not. That is, *anigmenos* means 'opened', implying a prior event of opening, whereas *anihtos* means 'open', with no implications of such a prior event. This correlates with syntactic differences between the two formations (for instance, with respect to the licensing of manner adverbs, etc.). Anagnostopoulou argues that these differences reflect different heights of attachment sites for the nominalizing suffixes *-menos* vs. *-tos*. While *-tos* attaches directly to the root, cp. (35), *-menos* either selects v+Asp ("target state participles", (35a), NB "v" stands for the verbalizing projection, *not* the one introducing the agent) or

[10] There are a few other participial formations which belong to the *katharevousa* register and which are rarely used outside of formal contexts (see Holton et al. 1997: 235ff. I am leaving these aside here.

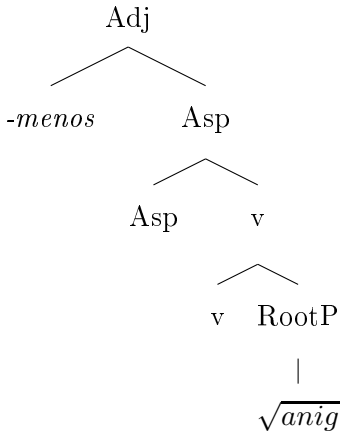
v+Voice+Asp ("resultant state participles", (35b)).

(35) *tos*-participles:

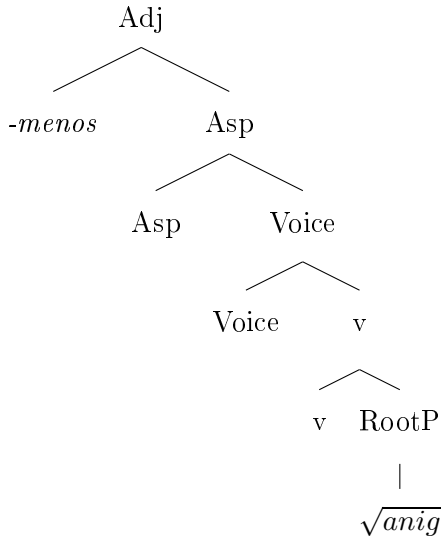


(36) *menos*-participles:

a.



b.



The different syntactic properties of these participles then follow from the difference in functional projections that they incorporate (for this general approach to nominalizations see also, e.g., Alexiadou 2001, Embick 2004b, Alexiadou et al. 2007, Baker and Vinokurova 2009, Harley 2009).

Deponent participles, both in *-tos* and in *-menos*, behave like the participles of non-deponent transitive verbs. The latter has a passive interpretation both in predicative position ("adjectival/stative passive", (37a) and (38a)) and in the attributive use, (37b) and (38b).

(37) Non-deponent *grafo* 'write':

a. To gramma ine grammeno
The letter.NOM is written
"The letter is written"

b. To grammeno gramma
The written letter

(38) Deponent *metahirizome* 'use':

a. To lexiko ine metahirismeno
The dictionary.NOM is used
"The dictionary is used"

b. To metahirismeno lexiko
The used dictionary

-tos occurs in negated participles of deponent and non-deponent verbs (ex. from Papangeli and Lavidas 2009: 201):

(39) a. Non-deponent *pleno* 'wash':

pli-menos — a-pli-tos
washed unwashed

b. Deponent *metahirizome* 'use:

metahiris-menos — a-metahirist-tos
used unused

While the behavior of the *tos*-participle of deponents is expected, given the proposed structure in (46), the passive reading of the *menos*-participle is unexpected under an analysis where it incorporates a functional projection Voice, as in (47b). As I argue in more detail in Section 5.4 where I discuss the non-finite formations of deponents more generally, incorporation of the head that determines active/non-active morphology in finite formations should lead to a continuation of mismatch behavior in deponent participles. That is, *metahirismenos* should mean active 'using', which it does not. Papangeli and Lavidas (2009: 201) posit that this is because the Voice projection is actually lacking in deponent adjectival participles, but do not motivate that claim further.

However, Modern Greek has a second type of participle in *-menos* with a different stress pattern: *-ómenos* instead of *-ménos*. While this is also described as belonging to *katharevousa*

(Holton et al. 1997: 235ff.), *-ómenos* is interesting in that it preserves the mismatch when formed to deponent verbs. Thus *metahirizómenos* means 'using' while *metahirisménos* means 'used', and likewise *epitithémenos/epitithómenos* 'attacking', *ekmetalevómenos* 'taking advantage of, using', *dehómenos* 'accepting', *arnúmenos* 'refusing', etc. These have the same active, transitive syntax as the finite forms, cp. (40).[11]

(40) Kerdise lefta ekmetalevómenos tus ergates
won.3SG.PAST.ACT money.ACC exploiting the.ACC workers.ACC
"He won money (by) exploiting the workers"

While its distribution is somewhat restricted by register, *-ómenos* clearly patterns with Vedic *-(m)āna-* and Ancient Greek *-menos* in preserving the "mismatch syntax" of deponents.

Modern Greek also has gerunds, formed with the invariant suffix *-ondas*. Tsimpli (2000) argues that they "bear active voice features" (p. 160). I argue in Chapter 4 that "active" is not a feature of a functional head v/Voice, but default inflection inserted in particular syntactic environments at Spell-Out. The characterization of *-ondas* as "subject-oriented" is therefore a priori more useful. Tsimpli furthermore argues that gerunds, which only occur in absolutive constructions, contain functional projections relating to manner and voice, but crucially not tense and agreement. While both *-menos* and *-ómenos* agree with their head nouns for number and gender, *-ondas* does not agree.

Not unexpectedly, *ondas*-gerunds to deponent verbs are rare and usually perceived as speaker errors; Papangeli and Lavidas (2009: 201, fn. 6) note that they are not fully accepted (they seem to be more acceptable to speakers than new formally active finite forms, however, cp. Roussou and Tsimpli 2007). An example is given in (41) (= Papangeli and Lavidas 2009's (9c)).

[11] I am grateful to Elena Anagnostopoulou, Sabine Iatridou, and Despina Oikonomou (who provided these examples) for discussing these participles with me.

(41) apodeho-ndas tin isodo metanaston
accept-GER the.ACC entry.ACC immigrants.GEN
"Accepting the entry of immigrants"

For the diachronic development of *-ondas* and *-menos* and their uses see Manolessou (2005).

3.7 Summary

In this chapter, I have presented the voice systems of different Indo-European languages from a synchronic and comparative perspective. We have seen that all of these languages basically have bivalent synthetic voice systems, that they all have a sizeable number of verbs that exclusively take non-active morphology, and that these verbs fall into several semantically predictable classes.

Besides these canonical middles, however, all these languages also have a semantically less coherent class of non-canonical middles (deponents). These mismatch verbs behave slightly differently from language to language with respect to non-finite formations and other parts of their paradigm, and this chapter was meant to elucidate this cross-linguistic variation.

Interestingly, however, there is a certain extent of cross-linguistic coherence in deponent verb meanings. The following table lists lexical items with very similar semantics that all pattern as deponent verbs in these five languages. Note that these are not cognate pairs, that is, they do not go back to the same (Proto-Indo-European) lexical item.

Table 27. Correlations between deponent verbs

Vedic	Hittite	Latin	Greek	Modern Greek	Meaning
trā́yate	*paḫša(ri)*	*tueor*	*erúomai*		'protect'
bā́dhate			*íptomai*	*epititheme*	'attack, beset'
		imitor		*mimume*	'imitate'
		ulcīscor	*tī́numai* (*dízēmai*)	*ekdikume*	'take revenge on, avenge'
rábhate (*pátyate*)		*adipīscor*, *nancīscor*	*aínumai*, *dékhomai*	*sfeterizome*, *karponome*	'take, appropriate'
		comminīscor, *māchinor*	*mḗdomai*	*skarfizome*	'contrive, devise'
ī́ḍyate, *vándate*			*eúkhomai*		'praise'
		ūtor		*(meta)hirizome*, *kapilevome*	'use'
kṣádate		*fungor*	*titúskomai*		'prepare, carry out'
	ḫannar(ri)	*perīclitor*	*aitiáomai*, *prokalízomai*		'challenge, contest, test'

Note, however, that we cannot simply add these predicates to our list of canonical functions of non-active morphology, since all of these deponent verb classes have formally active synonyms at the same synchronic stage. That is, the lexical meaning "protect" was not in any way specified for non-active morphology in Indo-European, any more than "attack" or "praise"

was. Rather, it must be the lexical entry of these particular verbs themselves that must be synchronically specified to trigger deponent behavior, for reasons specific to the diachronic development of these verbs.

Having established what "mismatch paradigms" look like, I discuss the syntax of deponent verbs in more detail in the next chapter, confirming that they are indeed mismatch verbs and cannot be analyzed as experiencer or self-benefactive verbs (hence canonical middles). I start by discussing previous approaches to mismatch verbs and their benefits and shortcomings. I present my own analysis of deponents in Section 4.3.

Chapter 4

Explaining the mismatch

4.1 Previous approaches to deponency

The fact that deponency is found both in modern and ancient languages that are not genetically related makes it likely that this kind of formal feature mismatch is a cross-linguistic universal that verbal systems can display. Deponent verbs raise several questions concerning the relationship between syntax and morphology. In languages such as the ones introduced above, with a productive distinction between active and non-active voice morphology, one would predict that transitive verbs like 'incite', 'protect', and 'devour' would choose active morphology. On the morphological side, one would predict that if these verbs did pick non-active morphology, their meaning should be 'is incited', 'is protected', or some similar non-active meaning.

There are several ways in which this mismatch between expected form and expected meaning could be approached. Stump (2007) and Müller (2013) both distinguish between *form deponency* and *property deponency*. Form deponency means that verbs have the "wrong" morphological exponence for their syntactic and semantic behavior. Under this view, a deponent verb like Vedic *grásate* 'devours' is an active verb that wrongly takes only non-active endings. Property deponency, on the other hand, means that verbs have the "wrong" meaning for the morphology they take. Under this view, *grásate* is a middle verb that has the wrong

meaning and morphosyntactic behavior for the endings that it takes.

Previous approaches to deponency have focused on finding a diachronic explanation for individual lexical items with the "wrong" morphological exponence, usually via reanalysis of an older, canonical function. While this can indeed often explain how a particular verb came to be a deponent, focussing on diachrony alone misses an interesting generalization, namely that voice mismatches are a regular feature of certain kinds of voice systems ("Greek-type" voice sytems) across non-genetically related languages. In other words, the possibility of such a reanalysis must be part of the grammar of a speaker of a Greek-type system, but not of that of a speaker of a language with an English-type voice system. This means that there must be a synchronic component to deponency that needs to be accounted for in terms of general principles of the grammatical apparatus.

One argument in favor of this view is that deponents are not necessarily eliminated in the course of a language's history, but are often remarkably stable. Latin deponents such as *hortor* 'incite' and *sequor* 'follow' remain solidly deponent for a period of over 500 years without being replaced by formally active forms like **hortō* and *sequō*,[1] and the same holds for Vedic Sanskrit and Greek. In Sanskrit, deponent verbs are replaced by verbs with active morphology only when the distinction between active and middle voice breaks down on the way to Middle Indic. In Greek, deponent behavior is even extended throughout the history of the language, so that verbs that were active in Ancient Greek (or distinguished between active and middle forms) end up being deponents in Modern Greek, e.g. Ancient Greek active *ekhthaírō* 'hate' → Modern Greek non-active *ehthrevome*; act. *empisteúō* 'I entrust' → MG non-act. *empistevome*, etc. (Lavidas and Papangeli 2007: 112ff.). This is remarkable given that there is also a counteracting tendency for syntactically active transitive verbs to be recharacterized as morphologically active ("morphological coercion", see Roussou and Tsimpli (2007), Lavidas and Papangeli (2007), and Manzini et al. (Forthcoming) on Modern Greek "neo-actives"). The fact that some deponents nevertheless escape this process means that

[1] Active *sequō* is actually marginally attested, but does not catch on.

there must be a synchronic niche for mismatch verbs at any given stage of such voice systems.

Moreover, it is not always possible to find an obvious synchronic motivation for non-active morphology on a syntactically active, transitive verb. That is, the synchronic non-canonical function of these verbs is not always immediately derivable from a previous canonical function, and many times can only be uncovered by studying the diachrony of these verbs. Take, for example, the Latin deponent verb *sequor* 'follow'. In Latin, this verb at first glance behaves like a mismatch verb: It has a nominative subject and an accusative object.

(1) Latin, Plaut., *Aulularia* 4.7.16:

I, iam sequor te, mater
go.IPV at.once follow.1SG.PRES.PASS you.ACC mother

"Go! I (will) follow you at once, mother."

However, the comparison with Greek and Vedic shows that this verb only marginally takes accusative objects in these languages. In fact, the use with dative (Greek) and instrumental (Vedic) arguments is much more common, e.g.:

(2) Vedic, RV 1.145.2:

'syá krátvā sacate ápradṛpitaḥ
DEM.PRON.GEN.SG insight.INSTR follow.3SG.PRES.MID careless.NOM

"The one who isn't careless follows his insight"

(3) Greek, Hom., Od., 9.159:

nēes mén moi héponto duṓdeka
ships PART me.DAT follow.3PL.IPF.MID twelve

"Twelve ships followed me"

Since the Greek dative has taken over some functions of the PIE instrumental (which is not preserved as a separate category in Greek), the most likely explanation is that the root $*sek^{u}$ that these verbs ultimatively go back to originally meant 'go along, together with' and took instrumental arguments (or quasi-arguments). But this meaning could be described as

translational motion, which according to Kemmer (1993) falls into the class of predicate types that cross-linguistically take non-active morphology. This verb would therefore originally have been a canonical middle verb (*medium tantum*), which on the way to Latin developed into a deponent. While its non-active morphology is understandable from a diachronic perspective, it cannot easily be motivated from the point of view of the synchronic distribution of active vs. non-active morphology in Latin.

While historical linguists may eventually uncover an earlier canonical function for even the most obstreperous deponent using comparative or internal reconstruction, an L1 acquirer obviously does not have access to a deponent's prehistory and must therefore find another way of incorporating a voice mismatch into her grammar.

In the following sections, I provide further arguments for the view that deponency needs a general synchronic account *in addition* to an account of the diachronic trajectory of the individual lexical items.

4.1.1 Deponency as lexical idiosyncrasy

An obvious hypothesis concerning deponents would be the assumption that there is nothing *syntactically* interesting about them—they are normal active verbs that simply share the idiosyncrasy of having some feature in their lexical entry that will cause them to be spelled out as non-active. Such an analysis would treat deponents as cases of *form deponency*, that is, as active verbs which are "wrongly" spelled out as non-active because the lexical entry of their root or stem includes a diacritic [PASS] or [DEP]. One could then look for a diachronic explanation as to why certain verbs have acquired this feature. Such an approach to deponency is extremely widespread, spanning different theoretical schools (e.g., Embick 1998, Embick 2000, Sadler and Spencer 2001, Kiparsky 2005, Bjorkman 2011). However, while I ultimately agree that there is a diacritic in the lexical entry of deponents that triggers their mismatch behavior, I propose that it cannot be a feature [PASS] or [DEP]. First, if deponent behavior were triggered by a feature [PASS] on a lexical entry, one would not expect deponent behavior to be influenced by tense, aspect, or mood (TAM). However, it is well known that Ancient

Greek and Latin have so-called "semi-deponent" verbs that are deponent only in particular tenses, but formally active in others (see Section 4.4.2 for a discussion of this pattern). In Latin, for example, active verbs have synthetic active perfects, whereas deponent verbs have analytic active perfects consisting of a perfect (passive) participle (PPP) plus an auxiliary. Semi-deponent verbs have active present tense forms, but analytic perfects.

Table 28. Latin semi-deponents

	active verb	deponent verb	semi-deponent verb
pres.	**am-ō̄**	hort-or	**confid-ō̄**
	'I love'	'I incite'	'I trust'
perf.	am-āv-ī̄	**hortatus sum**	**confisus sum**
	'I have loved'	'I have incited'	'I have trusted'

In Greek, a similar split is in evidence between the present and the future tense. A number of verbs have active morphology in the present, but middle morphology in the corresponding futures (the future marker is *-s-*):

Table 29. Greek semi-deponents

	active verb	deponent verb	semi-deponent verb
pres.	**gráph-ō̄**	dék^{h}-omai	**akoú-ō̄**
	'I write'	'I receive'	'I hear'
fut.	gráp-s-ō̄	**dék-s-omai**	**akoú-s-omai**
	'I will write'	'I will receive'	'I will hear'

A feature [PASS] on a root should not be sensitive to any particular TAM configuration—such roots should behave as deponents in all forms of their paradigm, independent of TAM

and finiteness.

In a lexicalist approach, one could explain this by saying that deponents are lexically marked for non-active morphology in combination with certain stem-forming suffixes. That is, the abstract Greek root AKOU is unmarked, whereas the combination AKOU + *-s* has a diacritic [NONACT] in its lexical entry. However, there is no way of constraining this approach: in principle, any diacritic on any lexical entry, and any combination thereof should be possible, and this is clearly not the case.[2] Moreover, the problem of the diachrony of such stems remains: How would this situation arise diachronically, and why would children learn such a system rather than regularize the paradigm and get rid of this lexical idiosyncrasy?

A further argument against a feature [PASS] (or [NONACT]) on deponent roots (or stems) comes from Sanskrit. Classical Sanskrit has a periphrastic perfect construction besides the regular synthetic perfect. The periphrastic perfect is formed using the accusative singular of a verbal abstract of the root or stem with the finite synthetic perfect of an auxiliary (usually *kṛ* 'do, make', see Whitney 1879: 347ff., Delbrück 1888: 426f., Macdonell 1910: 365, Gotō 2013: 123). The verbal abstract often includes present stem morphology of stems that do not make a synthetic perfect, like the causative, intensive, or desiderative. That is, we find verbalizing morphology on the verbal abstract, but perfect and voice morphology on the auxiliary.

Interestingly, deponent verbs always select the *middle* perfect form of the auxiliary, whereas verbs which alternate between active and middle morphology in the non-perfect stems also alternate in the perfect auxiliary. Examples are given in table 30 (*-a* is the 3sg. perfect active ending, *-e* is the 3sg. perfect middle ending, *-ur* is the 3pl. perfect active ending), see Whitney 1885 and Stump 2007 for more examples.

[2] See Embick (1997: 281ff.) for a detailed discussion of why certain features, e.g., [PAST], cannot be inherent to roots.

Table 30. Sanskrit periphrastic perfects

	Root	Synthetic perf.	Meaning	Analytic perf.	Meaning
Alternating	*vyā*	*vivy-**úr***	'have covered'	*vyayā́m̐ cakār-**a***	'has covered'
	bhī	*bibhāy-**a***	'is afraid'	*bibhayā́m̐ cakār-**a***	'was afraid'
	vid	*véd-**a***	'knows'	*vidā́m̐ cakār-**a***	'knew'
Deponent	*īḍ*	*īḍ-**e***	'has praised'	*īḍām̐ cakr-**e***	'has praised'
	idh	*īdh-**é***	'has ignited'	*indhā́m̐ cakr-**e***	'has ignited'
	īkṣ			*īkṣā́m̐ cakr-**e***	'has seen'

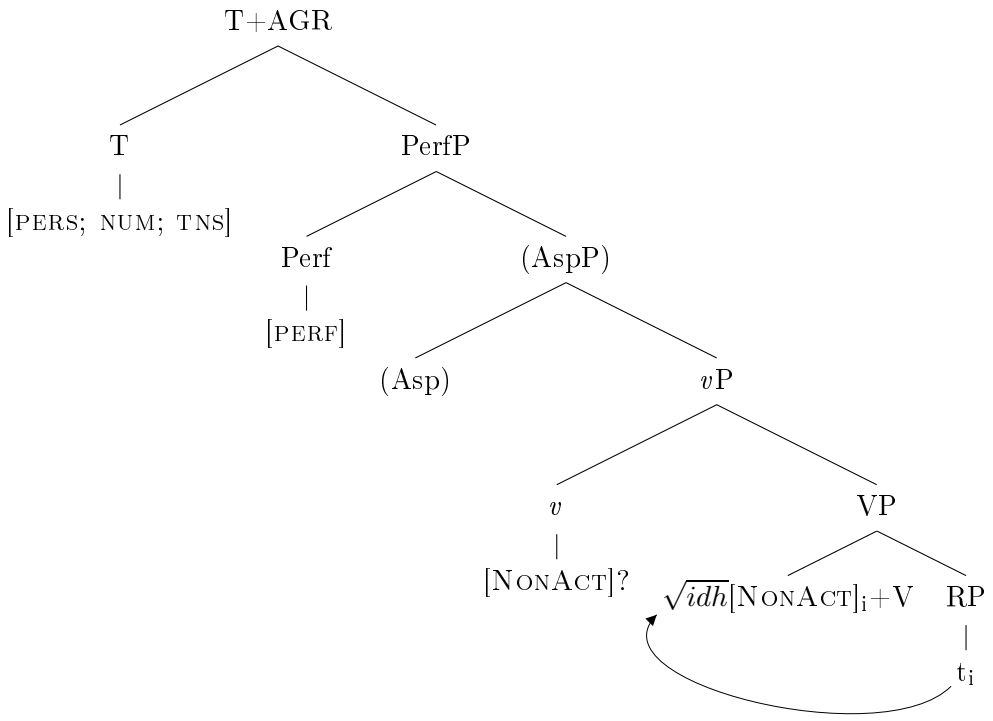
If the deponent status of *īḍ* were determined by a non-active feature on this root, there is no reason why a non-active auxiliary should be selected when the root itself is in a voice-neutral nominal form.

Kiparsky (2005) follows the literature in assuming that the Sanskrit periphrastic perfect is only used when the formation of the expected reduplicated synthetic perfect is prevented because of a synchronic restriction against reduplication of certain root structures, namely V̄C and VCC, or to stems that do not allow reduplication. It is true that the synthetic perfect is regularly found with causative stems, which cannot be reduplicated. However, as (3) shows, V̄C- and VCC-roots actually make synthetic perfects in Vedic (and Classical Sanskrit). Moreover, roots that can be regularly reduplicated, like *vyā*, *bhī*, and *vid*, also form periphrastic perfects. Kiparsky furthermore points out that the periphrastic perfect has the synchronically expected meaning in cases in which the corresponding synthetic perfect has an irregular meaning (cp. irregular *véda* 'knows' vs. regular *vidāṁ cakāra* 'has known'); this is expected given that the periphrastic perfect is the newer formation. The relationship between the synthetic and the periphrastic perfect is therefore not quite straightforward both from the phonological and the semantic point of view. The important point is that the periphrastic perfect shows that deponent behavior cannot simply depend on a feature [NonAct] on particular roots alone, since this offers no explanation for the presence of non-active morphology on the *auxiliary*. Rather, the mismatch seems to happen when certain roots interact with the func-

tional structure associated with tense/aspect projections. Recall that in Bjorkman (2011)'s approach (introduced in Section 3.4.1 above), auxiliaries are inserted to pick up "stranded" inflectional features (when movement of the verb is blocked, for example). Applied to the Sanskrit periphrastic perfect, we see both the feature [PERF] (for perfect, not perfective) and the feature [NONACT] expressed on the auxiliary.

But we are operating under the assumption that deponents have a root feature [NONACT], indicated in (4). The verbal noun exhibits stem-forming morphology, suggesting that the root moves at least to V, as in the following example (the hierarchy of functional projections in the perfect is based on Iatridou et al. 2001).

(4)



However, at this point we face a dilemma. We have a lexical feature [NONACT] on the root, by stipulation. But we also need to ensure that voice is expressed on the auxiliary (which is where we actually see voice morphology). That is, it seems as if the feature content of the auxiliary is determined by T+AGR, Perf and Asp, rather than the root (which is stuck in V). But if that is the case, how can we ensure that deponents auxiliaries always surface with non-active morphology? I come back to this dilemma in Section 5.3 and propose an

alternative account for (4). At this point, it should suffice to illustrate that a lexical feature [PASS]/[NONACT] is insufficient to capture all aspects of deponency.

Moreover, languages which *only* have periphrastic non-active voice constructions, like English, do not have deponents. That is, there are no BE + past participle-passives in English that are syntactically active. The same holds for languages that have "analytic middles", in which a morphologically active verb combines with an anaphoric pronoun (e.g., German *sich*, Dutch *zich*, French *se*, Italian *si*, etc.). These constructions have many of the functions defined as canonical in Section 2.2 (reflexive, reciprocal, anticausative, dispositional, etc.). Yet they never make deponents, that is, there are no analytic middle "mismatch cases". There is no *a priori* reason why these languages should never have a lexical feature [PASS], however.

Taken together, these facts indicate that there must be a deeper explanation of deponency than simply positing a lexical feature associated with certain verbal roots that triggers the insertion of non-active morphology despite the active syntax of such verbs. Rather, deponency is a feature of particular types of voice systems, and should receive an explanation within a general theory of the morphosyntax of these voice systems.

4.1.2 Deponency as a lexical-semantic phenomenon

While the lexical approach acknowledges the idiosyncratic morphosyntactic behavior of deponents, one could also go the other direction and start with the assumption that the semantics of deponent verbs can somehow be subsumed under the canonical function(s) of non-active voice morphology. Such approaches are widespread in the traditional literature on Latin, Greek, and Sanskrit, and have also been taken up more recently in the typological literature (e.g. Klaiman 1991, Kemmer 1993, and the papers in Fox and Hopper 1994). Broadly speaking, the common denominator for non-active voice in such approaches is usually termed "subject-affectedness", i.e. the subject is somehow affected by the verbal action, by being the patient/theme (as in passives and mediopassives) or by initiating and controlling it (to account for the reflexive/reciprocal function) or by being the recipient of it (benefactives/malefactives). Compare the following description by Gonda (1979: 9) on the function of the Sanskrit middle:

> "In studying the opposition between the active and the middle voices in those frequent cases in which a verb is conjugated in both diatheses the former may be defined as the category which essentially signifies that the subject performs a process (...) Being opposed to the active the medium adds its specific nuance to the verb—viz. "the process is taking place with regard to the person who (the thing which) is the subject; it happens to him (it) etc." (...)"

This works at least descriptively for cases in which a middle verb has a reflexive or self-benefactive function compared to the corresponding active, e.g.:

(5) Sanskrit:

a. act. *punā́ti* 'washes': mid. *pávate* 'washes oneself'

b. act. *dṛ̆ṁhā́ti* 'makes firm': mid. *dṛ̆ṁhā́te* 'becomes firm'

c. act. *várdhati* 'grows something': mid. *várdhate* 'grows'

In the middle-marked variants, it is intuitively easy to see how the process "is happening to the subject". It is more difficult in the case of non-oppositional middles like *śáye* 'lies' or *ā́ste* 'sits', where it is difficult to argue that any sort of process is "happening" to someone. Moreover, in self-benefactives, "the process" is apparently happening to both the subject and the object.

Gonda goes on to say that the actual use of voice marking with certain verbal roots/stems in Vedic often clashes with this superficial classification. He cites RV 6.16.48 as an example of a transitive deponent whose middle voice morphology would not be predicted by this classification:

(6) RV 6.16.48:

agníṃ	devā́so	...	indh-áte
fire.ACC.SG	gods.NOM.PL		kindle-3PL.PRES.MID

'The gods kindle the fire'

Gonda suggests the translation "the event of kindling comes to pass in the sphere of the gods with respect to fire" (p. 11), which is rather forced. Moreover, nothing would prevent one from paraphrasing a formally active transitive verb in the same way, i.e. taking active *X Y bhára-ti* "X carries Y" to mean "the event of carrying happens in the sphere of X with respect to Y". Some scholars translate "agentive" middle-marked verbs like the one in (6) consistently as self-benefactives, i.e., "The gods kindle the fire for themselves", but without a clear definition of what a non-alternating self-benefactive might mean synchronically (cp. French and German, where non-alternating self-benefactives are highly restricted) this approach is circular and will allow *any* action to be qualified as self-benefactive. Again, it has to be stressed that the label "self-benefactive" may in some cases provide a diachronic explanation (in particular for verbs that mean 'take, seize', etc.), but using this label as a "last resort" strategy to explain synchronic mismatch cases like Gonda does for Vedic is methodologically unilluminating.

Moreover, the comparison with Modern Greek shows that native speakers do not have the intuition that deponents (in the narrow definition) have a self-benefactive component.

The "subject affectedness" approach runs into trouble on another level as well. In their study of Modern Greek (MG) deponents, Zombolou and Alexiadou (2014) point out that the claim that "deponents denote subject affectedness in the presence of control" (Kemmer 1993) cannot be supported "since many deponents in MG have a passive or anticausative meaning which clearly lacks control" (p. 13, NB their use of "deponent", i.e., middle-only verbs).

Furthermore, semi-deponents as discussed above would be difficult to predict, since it is not clear why "subject affectedness" would only be relevant to particular TAM configurations. Taken together, this indicates that an approach to the distribution of non-active voice based purely on lexical-semantic and pragmatic notions such as "affectedness" or "situation control" does not have any predictive power and cannot explain the behavior of mismatch verbs in conjunction with particular tense/aspect morphology, finiteness, or nominalizing morphology. As I will argue in more detail in the next section, this behavior calls for a syntactic account, at least synchronically.

4.1.3 Summary

In this section, I have presented arguments that deponency cannot *only* be understood as an idiosyncrasy of certain verbs triggered by a diacritic in their lexical entries that forces the insertion of non-active morphology, at least not independently of the verbal functional structure relating to tense, aspect, and finiteness (more arguments for this are presented in the next section). Nor can deponents be subsumed under the canonical function of middle morphology, unless one is willing to stretch the definition of "canonical" until it loses all its predictive power. In the next chapter, I suggest an analysis that derives deponent behavior from a structural relation between the functional projections Voice/v and the "verbalizing" projection V that determines thematic aspect (*Aktionsart*). That is, I propose that deponency should be understood as *syntactic* phenomenon, in the sense that it originates in the course of the syntactic derivation of a predicate.

First, however, I argue in the next section that deponents are agentive and do not fall under any of the canonical functions of non-active voice. This is important given the attempts to stretch the definition of "canonical middles" to encompass deponents which I discussed in this section.

4.2 Deponents are agentive

While Zombolou and Alexiadou (2014)'s study shows that the overwhelming majority of morphologically non-active verbs in a given language actually instantiate the canonical functions of non-active voice, their attempt to stretch this finding to cover *all* morphologically non-active verbs is less convincing. Their starting point is the observation that many of the MG transitive *media tantum* are psych verbs/verbs of cognition/experiencer verbs, in which the external argument is an experiencer or undergoer rather than an agent. Examples include:

(7) MG experiencer *media tantum*

a. *fevome* 'fear'

b. *esthanome* 'feel'

c. *gevome* 'taste'

d. *skeftome* 'think'

Based on this observation, they then argue that *all* transitive deponents can be analyzed as experiencer verbs "because they can be analysed as benefactives or malefactives" (p. 8). As discussed in Section 2.2.5, the benefactive or indirect reflexive use is a well-attested canonical function of non-active morphology. If Zombolou and Alexiadou (2014) are right, there simply is no mismatch here—all transitive deponents are actually canonical middles.

However, there are good arguments against such an analysis. Embick (1997: 216f.), based on Anagnostopoulou (1999), shows that transitive deponents in Modern Greek pattern systematically with agentive transitive verbs as opposed to experiencer verbs with respect to clitic doubling, word order, and clitic left dislocation (all of the MG examples are taken from Embick).

With some psych-verbs, both an agentive and a psychological reading is possible under certain circumstances. In the agentive reading, the subject is an agent carrying out an action (as in (8a)), in the psychological reading, the subject is the cause of an event (as in (8b)). While the agentive reading with an animate subject does not require clitic doubling of the object, (8a), the psychological reading is ungrammatical without the doubled clitic, (8b):

(8) a. I Maria enohli ton Petro
The Maria.NOM bothers the Petros.ACC
"Maria bothers Petros"

b. Ta epipla *?(ton) enohlun ton Petro
The furniture.NOM CL.ACC bothers the Petros.ACC
"The furniture bothers Petros"

Transitive agentive deponents like *hriazome* 'need' pattern with the agentive reading and do not require clitic doubling, as in (9). This indicates that their external argument is an agent rather than a cause/theme.[3]

[3] *Hriazome* may not be the best verb with which to exemplify this, since it fails to behave as agentive with respect to other tests, like imperative formation (Despina Oikonomou, p.c.):

(9) I Maria hriazete ton Petro
The Maria needs.NACT the Petros.ACC
"Maria needs Petros"

For experiencer verbs, both the word orders EXP-verb-THEME and THEME-verb-EXP are possible and unmarked with respect to their discourse status. However, fronting of the object of a non-psych verb results in a marked clitic left dislocation (CLLD) structure. Transitive deponents pattern as non-psych verbs in triggering this CLLD construction:

(10) a. O Petros hriazete to vivlio
The Petros.NOM needs the book
"Petros needs the book"

b. To vivlio to hriazete o Petros
The book CL needs the Petros
"The book, Petros needs"

Agentivity tests can also be applied to the other languages that have deponents. For the older Indo-European languages, the most important ones are agent noun formation, passivization, and agent-oriented adverbs.

4.2.1 Agent nouns

Vedic, Greek, Hittite, and Latin all have designated agent-noun forming suffixes that have the same properties as agent nominalizers in other languages: They take genitive objects and can only be formed to verbs whose external argument is an agent (or animate causer; for a detailed account of the properties of agent nominalizations see Baker and Vinokurova 2009). This property distinguishes agentive verbs from verbs whose surfaces subject is an experiencer. Experiencer verbs cannot form agent nouns, that is, they cannot take the same nominalizing morphology as agentive verbs in the same reading:

---

i. ?* Hriasu ton Petro!
Need.IPV the.ACC Petros.ACC

However, since these tests also work for deponents that do form imperatives, I cite Embick's examples with *hriazome* here.

(11) English:

a. #fearer

b. #smeller

c. #feeler

d. #forgetter

While an instrumental reading in which the *-er* nominal designates the instrument with which an action is performed (rather than the agent performing it) is available for cases like *feeler*, an agentive one is not.[4] Moreover, in English only agent nouns can inherit the argument structure of a verb and appear with an *of*-complement, while instrumental nouns cannot (*mower of the lawn* can only be a person, not a machine), and only agent nouns are eventive, whereas instrumentals are not (see, e.g., Levin and Rappaport 1988, Pesetsky 1995: 76ff. on CAUS object experiencer verbs, Baker and Vinokurova 2009: 530, fn. 12). The same holds for self-benefactives, reflexives, and unaccusatives, which likewise do not make agent nouns.

This generalization also applies to the older Indo-European languages. Vedic has an agent-noun forming suffix *-tar-* which comes in two variants: The non-accented variant behaves like a verbal participle and takes accusative objects, while the accented version *-tár-* takes genitive objects and behaves like a true agent noun (Benveniste 1948, AiG II,2: 669ff., Tichy 1995). Deponents behave like active agentive verbs and form agent nouns in *-tár-*, (13).

(12) Vedic non-deponent agent nouns

a. *dā-tár-* 'giver' (*dā* 'give')

b. *ne-tár-* 'leader' (*nī* 'lead')

c. *rakṣi-tár-* 'protector' (*rakṣ* 'protect')

[4]But note that these nouns are much better in compounds in which the first compound member is the theme or direct object: *god-fearer*, *witch-smeller*, *food-taster*.

(13) Vedic deponent agent nouns

a. *trā-tár-* 'protector' (*trā* 'protect')

b. *īḍi-tár-* 'praiser, worshipper' (*īḍ* 'praise')

c. *kṣat-tár-* 'server' (*kṣad* 'serve, prepare')

Both the forms in (12) and in (13) take genitive objects. Experiencer verbs, on the other hand, do not make agent nouns. Apparent exceptions are explicable in terms of the meanings of the base verb. Thus *yātā́r-* 'avenger' seems to belong to *yā* 'go', but this root fell together with a verb meaning 'seek out, demand', as shown by its Greek cognates (cp. Section 6.2.6 below); and cases like *marḍitár-* 'forgiver' (*mṛḍ* 'have pity, forgive') and AV *jñātár-* 'witness' (*jñā* 'know') can hardly be considered counterexamples. A survey of the collection of agent nouns in Tichy (1995) confirms that experiencer verbs, non-agentive verbs of motion, and unaccusatives do not take the suffix *-tar-* in Vedic. Although negative evidence in the strict sense is not available, Tichy (1995: 32, fn. 6–9) does give a list of non-agentive verbs that fail to make *tar*-nouns in Vedic.

The same holds for Greek, which also has two agent noun forming suffixes cognate with the Vedic ones: *-tōr*, broadly corresponding to Vedic unaccented *-tar-* and *-tḗr* corresponding to Vedic accented *-tár-*. Again, the collections of nouns in *-tḗr* in Fraenkel 1912, Buck and Petersen 1945, and Benveniste 1948 (see also Debrunner 1917: 170ff.) make it clear that only agentive verbs use this suffix to make agent nouns. It is furthermore found in kinship nouns (*patḗr* 'father', etc.) and with an instrumental reading with non-agentive verbs and (occasionally) agentive verbs (*lamptḗr* 'torch' : *lámpō* 'shine', *statḗr* a standard coin : *hístēmi* 'stand', *rhaistḗr* 'hammer' : *rhaíō* 'break, scatter', etc.).

Deponents, like non-deponent agentive verbs (cp. (14)), can make agent nouns in *-tḗr* (cp. (15)), and note that denominative agentive verbs likewise make agent nouns, as expected (as in (15b-c)):

(14) Greek non-deponent agent nouns

a. *ela-tḗr* 'driver' (*elaúnō* 'drive')

b. *dot-ḗr* 'giver' (*dídōmi* 'give')

c. *ole-tḗr* 'destroyer' (*óllumi* 'destroy')

(15) Greek deponent agent nouns

a. *rū-tḗr* 'protector' (*érūmai, rúomai* 'protect, guard')

b. *lēis-tḗr* 'robber' (*lēízomai* 'rob, plunder'; *lēís* 'plunder')

c. *lōbē-tḗr* 'slanderer' (*lōbáomai* 'slander, mistreat'; *lṓbē* 'insult')

Finally, Latin has a cognate agent noun forming suffix *-tor* (cp. Leumann 1977: 358f.). Like the non-deponent agentive nouns in (16), deponents use this suffix to make agent nouns (17).

(16) Latin non-deponent agent nouns

a. *amā-tor* 'lover' (*amō* 'love')

b. *vic-tor* 'conqueror' (*vincō* 'conquer')

c. *doc-tor* 'teacher' (*doceō* 'teach')

(17) Latin deponent agent nouns

a. *hortā-tor* 'inciter' (*hortor* 'urge, incite')

b. *vēnā-tor* 'hunter' (*vēnor* 'hunt')

c. *tū-tor* 'protector, guardian' (*tueor* 'watch, protect, guard')

Note that this test also works for Modern Greek, where agentive deponents likewise make agent nouns.[5] The agent noun suffix is *-tís*.

[5]I am grateful to Elena Anagnostopoulou and Despina Oikonomou for confirming this and for providing these examples.

(18) Modern Greek deponent agent nouns:

a. *hiris-tís* 'user, manipulator' (*hirizome* 'use, manipulate')

b. *ekmetalef-tís* 'exploiter' (*ekmetalevome* 'exploit')

c. *mimi-tís* 'imitator' (*mimume* 'imitate')

d. *kataras-tís* 'curser' (*katarieme* 'curse')

The evidence from agent noun formation confirms that deponents have active syntax and that their external arguments are agents. It is also evidence that the "mismatch" behavior only happens in the verbal domain, while nominalizations from deponent roots behave formally and syntactically like nominalizations from non-deponent roots with the same argument structure.

4.2.2 Passivization

If deponents are syntactically active agentive verbs, they should be able to passivize given the right conditions. This diagnostic is only available in languages that have designated passive morphology that is distinct from the morphology that deponents usually take—that is, we do not expect passivization in strictly bivalent voice systems, since the passive use of non-active morphology is presumably blocked for deponents.

Vedic basically has a binary voice system in which active and non-active voice take different inflectional endings. However, there are some tense/aspect stems in which a passive morpheme that is distinct from the non-active morphology is available to make passives. In tenses where a distinct passive exists, the passive interpretation of the middle is blocked (see (19b)), as expected based on the Hebrew facts discussed in Section 2.2.4. A trivalent distinction is available in the Vedic imperfective ("present") stem. Active verbs take the active endings, middle verbs take the middle endings, passive verbs take the passive suffix *-yá-* together with the middle endings. This is illustrated in (19) for the alternating root *bhṛ* 'carry' (the gloss VB stands for "verbalizer", or verbal stem-forming suffix, usually called "theme" or "class" suffix).

(19) a. Present active:

bhár-a-ti
carry-VB-3SG.NONPAST.ACT

"carries sth."

b. Present middle:

bhár-a-te
carry-VB-3SG.NONPAST.MID

"carries oneself/for one's own benefit/*is being carried"

c. Present passive:

bhri-yá-te
carry-PASS-3SG.NONPAST.MID

"is being carried"

Deponent verbs show that it is the suffix *-yá-* that passivizes, and not the middle morphology. Deponents behave like active transitive verbs in being able to form a *yá*-passive in their imperfective stem.

Table 31. Vedic deponent passives

Root	Deponent	Passive
īḍ	*ī́ṭ-ṭe* 'praises'	*īḍ-yá-te* 'is being praised'
	praise-3SG.NONPAST.MID	praise-PASS-3SG.NONPAST.MID
idh	*i<n>d-dhé* 'kindles'	*idh-yá-te* 'is being kindled'
	kindle<VB>-3SG.NONPAST.MID	kindle-PASS-3SG.NONPAST.MID
rabh	*rábha-te* 'seizes'	*rabh-yá-te* 'is being seized'
	seize-3SG.NONPAST.MID	seize-PASS-3SG.NONPAST.MID

The internal structure of Vedic *yá*-passives is discussed in more detail in Section 5.1. The deponent passives in table 31 show that passivization of deponents is possible if passive morphology that is distinct from the morphology that causes the mismatch (middle, in this

case) is available.

More evidence for this generalization comes from Greek. Greek developed a passivizing suffix *-thē-* in the aorist in post-Homeric Greek (cp. Section 5.2). Stahl (1907: 73f.) notes that deponents use this suffix to make passive aorists, as in the following example from Thucydides (5^{th} century BCE).

(20) Deponent *ktáomai* 'acquire', Thucydides, *The Peloponnesian War* 2.36.4:

(...) hoîs hékasta e-ktḗ-thē
REL.DAT.PL several.NOM.PL.N PAST-acquire-AOR.PASS.3SG

" (...) by which several (things) were acquired"

The passive aorist *ektḗthē* 'was acquired' contrasts with the middle aorist *ektḗsato* 'acquired', as used by the same author with the expected active syntax (e.g., in 1.4.1).

Another example comes from Herodotus (5^{th} century BCE). The deponent *dōréomai* 'give, bestow upon, endow with' regularly takes an accusative benefactive argument and a dative theme ('endow somebody$_{\text{ACC}}$ with something$_{\text{DAT}}$'). In the passive in (21), the accusative is promoted to subject.

(21) Deponent *dōréomai* 'give, endow with', Herodotus, *Histories* 8.85.3:

Phúlakos dè euergétēs basiléos an-e-gráph-ē kaì
Phulakos.NOM PART benefactor.NOM king.GEN down-PAST-write-AOR.PASS.3SG and
khṓrēi e-dōrḗ-thē pollêi
land.DAT PAST-endow-AOR.PASS.3SG much.DAT

"Phulakos was recorded as benefactor of the king and endowed with much land."

Note that the deponent passive *edōrḗthē* 'was endowed' syntactically behaves exactly like the non-deponent passive *anegráphē* 'was recorded' (from *ana-gráphō* 'write down'). Herodotus also uses a formally middle aorist *edōrḗsato*, which has the expected active syntax (e.g., in 4.88). More examples of syntactically passive *thē*-aorists can be found in Stahl, loc.cit.

The conclusion must be that deponents, like formally active transitive verbs, can passivize if distinct passive morphology is available. This is not usually the case in bivalent voice sys-

tems, but Vedic and Greek both developed distinct passive morphology in some tense/aspect stems, and in those cases we find deponent passives.

However, this also means that in languages which do not have separate passive morphology, we do not expect deponents to be able to passivize. This is the case for Latin, in which the "*r*-forms" are taken both by the passives of alternating verbs and by syntactically active deponents. Since there is no passive morphology available that is distinct from the *r*-endings, Latin deponents cannot passivize. This is true for most strictly bivalent voice systems and has given rise to the idea that deponents in general do not passivize. However, the Vedic and Greek data above show that this is not true, and that deponents can passivize under the right conditions.

Finally, it is often claimed that some Latin deponents can have both active and passive readings (e.g., Draeger 1878: 156ff., Hofmann 1910: 12ff., 32ff., Flobert 1975, Embick 2000: 194). These claims should be taken with a grain of salt, since these uses usually imply that the deponent has been reanalyzed as regular alternating verb and a new formally active transitive form exists beside the formally and functionally passive form. This may actually be the case for the often-cited example in (22).

(22) Varro ap. Prisc. II, 387:

ab amīcīs hortā-rētur
by friends.ABL urge-3SG.IPF.SUBJ.PASS

"He was urged by his friends"

A formally active *hortō* may be attested already in Ennius (*Ann.* 567, Vahlen 1928: 104), an active perfect form crops up in Seneca (*Suas.* 5.8). While no formally active form is known from Varro, (22) should probably be analyzed as passive of the formally active *hortō* attested elsewhere.

Evidence for this analysis of seemingly ambiguous forms also comes from Modern Greek. While a passive reading of deponents is usually impossible, passive readings of formally non-active deponent forms become available once the oppositional formally active transitive forms

exist. Roussou and Tsimpli 2007: 149f. cite the following examples in which the deponent *ekmetalevome* 'exploit', which usually disallows a passive interpretation, acts like an alternating verb: in (23a), its new formally active variant syntactically active and transitive while its new oppositional non-active variant in (23b) is passive (I have modified the glosses slightly for reasons of consistency).

(23) a. ti periehi to INTEREG 3, oste na to ekmetalefsume gia
what contain.3SG.ACT the intereg 3 so that it.ACC exploit.1PL.ACT for
ti diasinoriaki ...
the inter-borders
".. what INTEREG 3 contains, so that we can exploit it for the inter-borders ..."

b. i iroes tetjon istorion ekmetalevonde apo ta MME
the heroes such.GEN stories.GEN exploit.3PL.NONPAST.NONACT by the media
"The heroes of such stories are being exploited by the media"

However, Roussou and Tsimpli (2007) also point out that speakers are very reluctant to accept new formally active forms of deponents such as (23a).

The Vedic and Greek examples of deponent passives, on the other hand, are different from the Latin example in (22), since here we see passive morphology that is distinct from the morphology that triggers the mismatch, while the Latin form seems to be truly ambiguous if taken out of context.

4.2.3 Agent-oriented adverbs

Agent-oriented adverbs expressing intention or volition can modify agentive predicates, but not psych verbs/experiencer verbs. Adverb formation is notoriously varied in the older Indo-European languages, where a variety of different suffixes is used, and this test is more difficult to apply to the closed-corpus languages under study here than the other tests. That being said, Vedic in particular provides a few instances in which non-canonical middles are modified by agent-oriented adjunct phrases. Vedic uses certain substantival case-forms as adverb markers, in particular the instrumental and the accusative (cp. Macdonell 1910: 427ff.). The instrumental of the adjectival abstract *ójas-* 'power, might', *ójasā*, for example, is only used

with animate subjects and means "forcefully, with might". This adverbial use of the instrumental also occurs with agentive deponents, as in the following examples:

(24) Deponent *day* 'distribute', RV 1.130.7d-g:

atithigvā́ya śámbaraṃ girér ugró ávābharat
Atithigva.DAT Śambara.ACC mountain.ABL mighty.NOM push.down.3SG.IPF
mahó **dhánāni dáyamāna ójasā** víśvā
great.ACC prizes.ACC distributing.PART.PRES.MID.NOM.SG might.INSTR all.ACC
dhánāny ójasā
prizes.ACC might.INSTR

"The mighty one pushed Śambara off the mountain for Atithigva, distributing the great prizes with might, (distributing) all the prizes with might."

(25) Deponent *īś* 'rule (over)', RV 8.6.41a-b:

ṛ́ṣir hí pūrvajā́ ásy éka **īśāna**
Ṛṣi.NOM PART firstborn.NOM be.2SG one.NOM ruling.PTCP.PRES.MID.NOM.SG
ójasā
might.INSTR

"For you are the firstborn Ṛṣi, ruling by might alone."

The accusative of the adjective *sabā́dhaṣ-* 'eager' is used as an agent-oriented adverb in the following passage:

(26) Deponent *īḍ* 'praise, invoke', RV 7.8.1c:

náro havyébhir **ī́ḍate sabā́dhaḥ**
men.NOM sacrifices.INSTR invoke.3PL.PRES.MID eager.ACC.ADV

"The men are eagerly invoking (him) with sacrifices."

Another example comes from Latin, where the adverb *cōgitātē* 'deliberately, carefully, with consideration' presupposes an animate agent in the following passage:

(27) Deponent *meditor* 'think, consider', Plautus, *Miles gloriosus* 944:

Ab-eamus ergo intro, haec uti **meditemur cogitate**
PRVB-go.1PL.SUBJ then inside these so.that consider.1PL.SUBJ deliberately

"Let us go inside, then, so that we may carefully consider these things."

Although this test is less conclusive than the others, in combination with the evidence from agent noun formation and passivization it does provide more evidence for the agentive nature of the deponent class.

4.2.4 Summary

In this chapter, I have so far provided arguments in favor of analyzing deponents as transitive agentive verbs rather than as experiencer verbs. I have argued in Chapter 2 that canonical middles are characterized by their lack of an agentive subject. Deponents are therefore indeed cases of "feature mismatch" and cannot be captured by the same mechanism that derives the canonical functions of middle verbs—unless one is willing to give up the notion of "canonical function".

In the next section, I discuss the derivation of canonical and non-canonical non-active verbs.

4.3 Deriving deponents

A theory of voice mismatches should be able to account for the following properties of Indo-European deponents, established in the previous chapters: 1) their surface subject is an agent, 2) they are transitive, and 3) they take non-active morphology.

I have discussed 1) at length in the previous section and provided arguments for the agent status of the surface subject of deponents. 3) is self-evident, but I have not discussed 2) at length. I have discussed evidence that suggests that the objects of deponents have the same structural status as those of agentive transitive verbs like *hit* or *cut*, that is, themes with structural accusative case. In Chapter 2, I have furthermore argued against a valency reduction

approach to non-active morphology. Taken together, this means that the head that "triggers" non-active morphology can also value accusative case, and the occurrence of formally non-active deponents with accusative objects is not unexpected (cp. the structurally very similar self-benefactives in Section 2.2.5). I refer to this head as v[AG] ("agentive v"), that is, the type of functional head that can introduce external arguments, has event/agentivity features, and values accusative case on direct objects. I also follow Embick (1997: 174ff.), (1998) and (2004a) in assuming that "agentivity relates to the semantics of a head, not necessarily to the presence of a DP" (Embick 1997: 175). That is, the [AG] feature on v is not dependent on whether or not there is a DP in its specifier. This will become relevant below.

The absence of [AG] indicates that v is "defective" and cannot introduce an external argument or value accusative case. I argue in Section 5.2 that this head is found in certain unaccusatives and passives, following Alexiadou and Anagnostopoulou (2004), among others.

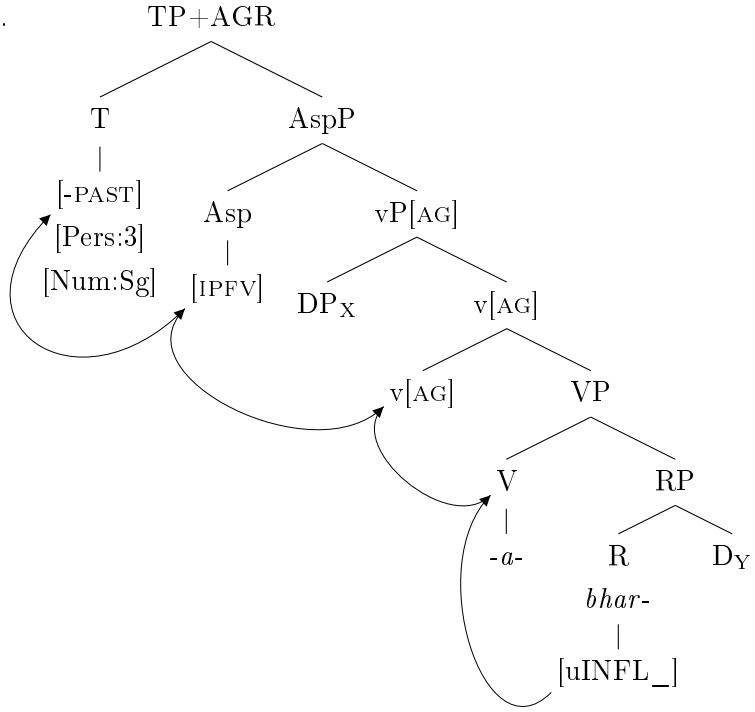
Note that it is a standard assumption in the literature that there are (at least) two different kinds of event/agentivity-associated heads, going back to Kratzer (1996)'s original introduction of a "voice" head, which according to her comes in two variants: one that introduces agents and one that does not. Chomsky (2001) distinguishes between a ϕ-complete v* and a defective v; the latter is found in passives and unaccusatives. A similar approach is taken by Kallulli (2007) and (2013) who distinguishes between three types of v-heads: v[+act] (an "activity" head, similar to Embick's v[AG]) and v[+cause] (a causation head). The third v head is underspecified for [+/-act] or [+/-cause]; this head is found in formally active unaccusatives (analogous to the "defective" v of Chomsky 2001).

This distinction is therefore well motivated, and I use Embick's notation v[AG] to indicate that agentivity is a feature of the head, not necessarily of the DP in its specifier.

With this background in mind, let us see what the derivations of a regular active and a non-active verb look like. I use Vedic *bhárati* 'carries' (act.) and *bhárate* 'carries/is carrying for herself' (mid.) as examples, but the same mechanisms apply to Ancient Greek, Hittite, and the Latin present (on the Latin periphrastic perfect see Section 3.4.1.).

(28) a. X Y *bhár-a-ti*
carry-VB-3SG.NONPAST.ACT
"X carries Y, X is carrying Y"

b.



So far, all assumptions are standard and do not need special motivation, although I do assume "upwards Agree" (following proposals by Bjorkman 2011, Wurmbrand 2012, and Zeijlstra 2012), that is, unvalued features probe upwards within their local domain for potential goals. This is indicated by the diacritic [uINFL_] on the root node RP. Agree furthermore triggers head movement, so $\sqrt{bhar}$ moves upwards and merges with the verbalizing head V ("verbalizing" in the sense of Harley 2005, 2011, similarly Borer To appear). The exponent of this head is the theme vowel -*a*-, but other suffixes, as well as zero-derivation, are available as well. When *v*P is merged, it introduces the external argument as proposed by Kratzer (1996). Because there is now a DP in the specifier of *v*P, the conditions for the assignment of non-active voice are not satisfied (I repeat the relevant rule here for convenience):

(29) $v \leftrightarrow v$-X/_ No external argument (Embick 2004a: 150)
"Non-active voice is assigned when *v* does not introduce an external argument"

Hence *v*[AG] is not spelled out as non-active in (28), but as active. The insertion rules for

active vs. non-active morphology on v[AG] can be summarized as follows:

(30) a. v[AG][NONACT] $\leftrightarrow$ non-active

b. v[AG] $\leftrightarrow$ active

In other words, active morphology is here treated as unmarked "elsewhere" inflection. I will provide more motivation for this in Section 5.2.

Finally, the verb agrees with Asp and T for aspectual and inflectional features and completes its head movement cycle. The result is a formally and syntactically active verb.

As for the shape of the inflectional endings, Embick (2000) notes in connection with the Latin *r*-endings that passive morphology in Latin seems to be spelled out higher than expected, namely in the T+AGR complex. The same holds for Vedic, Greek, and Hittite. To solve this problem, Embick (2000: 199) proposes adjunction of the [PASS] feature to T+AGR via Morphological Merger (see also Embick and Noyer 1999, 2001, 2007 on Morphological Merger), and this solution is also applicable to the [NONACT] feature on v in the present account. In (31) and (32), I deconstruct the feature specification of the Vedic 3sg. non-past active and middle endings to show how Merger results in their spell-out:

(31) Vedic 3sg. non-past active *-ti*

a. T: NONPAST $\leftrightarrow$ /*-i*/

b. AGR: 3SG $\leftrightarrow$ /*-t-*/

c. v[AG]: $\leftrightarrow$ /$\varnothing$/

$\rightarrow$ 3sg. non-past active $\leftrightarrow$ /*-ti*/

(32) Vedic 3sg. non-past middle *-te*

a. T: NONPAST $\leftrightarrow$ /*-i*/

b. AGR: 3SG $\leftrightarrow$ /*-t-*/

c. v[AG][NONACT] $\leftrightarrow$ /*-a-*/

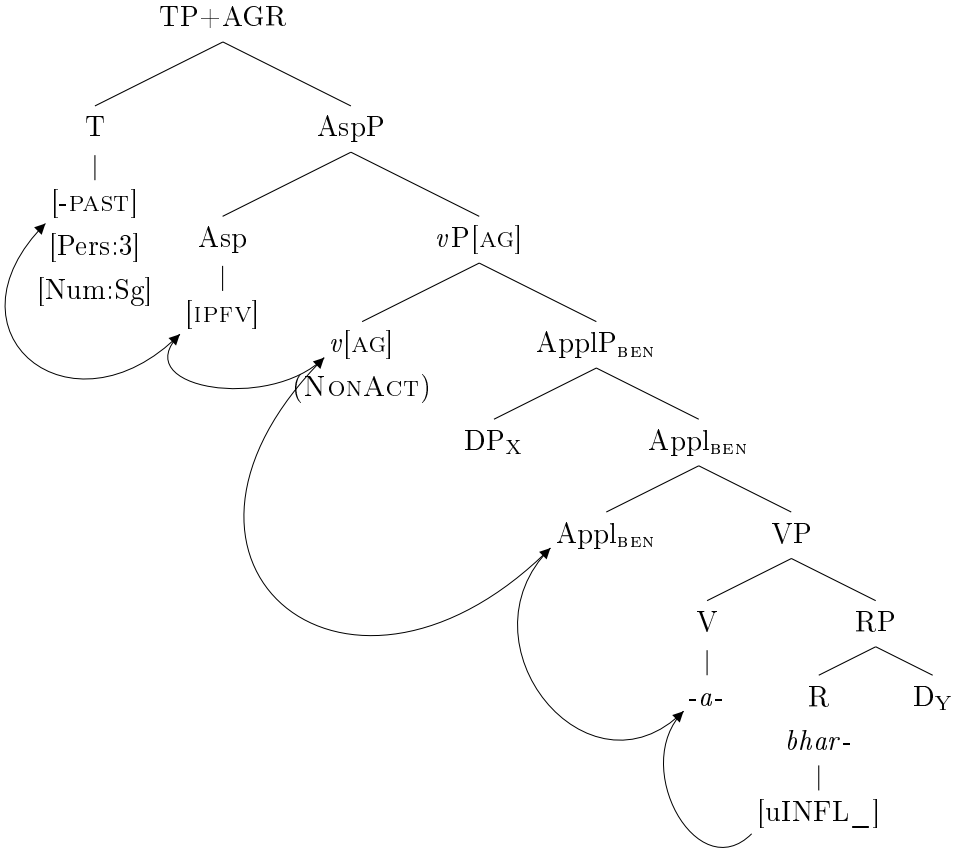
$\rightarrow$ 3sg. non-past middle /*-t-a-i*/ > /*-te*/

Now compare the same derivation for a middle verb. I use the self-benefactive *bhárate*,

but the general account holds for the other alternating verb classes of Section 2.2, as well as for the non-oppositional middles of Section 2.3. As a reminder that the non-active feature on v[AG] is not a syntactic feature, but a spell-out property of this head, I use round instead of square brackets for the feature (NonAct).

(33) a. X Y *bhár-a-te*
carry-VB-3SG.NONPAST.NONACT
"X carries Y for herself, X is carrying Y for herself"

b.



The derivation proceeds as in (26), with the crucial difference that v does not introduce an external argument DP and is therefore spelled out as v[NONACT]. The benefactive DP is introduced by the projection ApplP$_{BEN}$ (see Section 2.2.5), subsequent movement of this DP to subject position is not indicated in (33). Note, however, that this movement would take place successive-cyclically, with the benefactive DP passing through the specifier of vP. We must therefore assume that the [NONACT] assigning rule (27) is not sensitive to the trace of a moved DP in Spec.vP. However, this is not a problematic assumption, since we would otherwise

predict that *all* unaccusative verbs whose internal arguments move to subject position surface with active morphology, which is evidently not true.

Note that nothing in this account links non-active voice to the availability of accusative case. That is, whether or not an object DP receives case from v[AG] does not seem to depend on the presence or absence of the [NONACT] feature, and self-benefactive and indirect reflexives provide evidence for this, since they have accusative objects. This means that we do not need to worry about a special rule for the assignment of accusative case in deponents that is different from the accusative case found in canonical middles.

The ingredients for deriving a deponent verb are now in place. We have seen that deponents have agent arguments (cp. Vedic *trā* 'protect', *rabh* 'seize', *bādh* 'attack', *gras* 'devour', *īḍ* 'praise', Greek *daíomai* 'distribute', *erúomai* 'protect', *kélomai* 'command', *sī́nomai* 'plunder', etc.), but if these were introduced by v[AG] in the canonical Kratzerian fashion, we would expect active morphology to surface.

To solve this puzzle, consider how we can distinguish alternating roots from deponent roots in Vedic (again, I use Vedic as a place holder for the other languages discussed in Chapter 3). By themselves, there is nothing that distinguishes alternating roots like *han* 'slay' or *bhṛ* 'carry' from deponent roots like *rabh* 'seize' or *trā* 'protect'. Only in certain syntactic environments that we could pre-theoretically characterize as "verbal" does the distinction surface. That is, deponent verbs are specified for voice (non-active voice) as soon as verbalizing morphology is introduced. In other words, a speaker of Vedic Sanskrit knew that a deponent stem like *rábh-a-* would always take middle morphology, while an alternating verb stem like *bhár-a-* could take either active or middle morphology, depending on the syntactic context. The following table exemplifies this distinction.

Table 32. Vedic alternating and deponent verb stems

Alternating		Deponent	
Stem	Meaning	Stem	Meaning
várdh-a-$^{\text{act./mid.}}$	'grow'	*rábh-a-*$^{\text{mid.}}$	'seize'
bhár-a-$^{\text{act./mid.}}$	'carry'	*grás-a-*$^{\text{mid.}}$	'devour'
yáj-a-$^{\text{act./mid.}}$	'sacrifice'	*trā́-ya-*$^{\text{mid.}}$	'protect'

It seems that the voice specification of deponents is linked directly to their verbalizing morphology. More arguments for this come from "zero-derived" nominalizations of alternating vs. deponent roots, in which the nominalizing morphology seems to attach directly to the root. I have already introduced some of these nominalizations in Chapter 3 and in Section 5.2. In these formations, the non-deponent nominalizations (exemplified for *han* 'slay' in (34a) and (35a)) are syntactically and semantically identical to the deponent nominalizations (exemplified fro *trā* 'protect' in (34b) and (35b)).

(34) Agent nominalizations:

a. *han-tár-* 'slayer'

b. *trā-tár-* 'protector'

(35) Verbal adjectives:

a. *ha-tá-* 'slain'

b. *trā-tá-* 'protected'

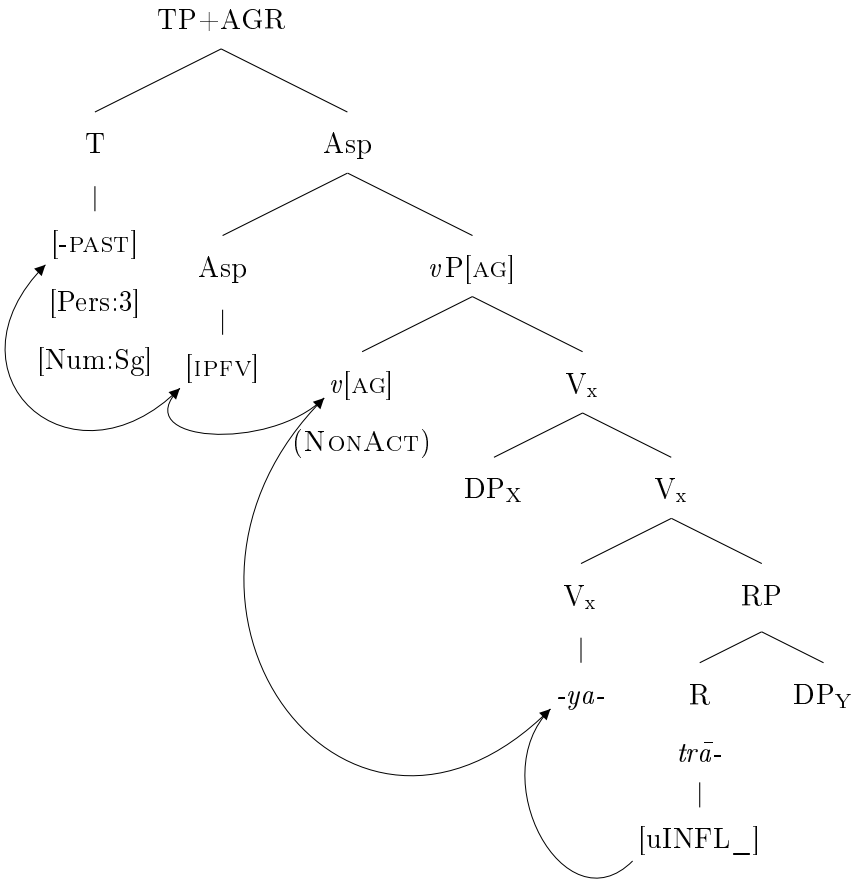
I propose that the reason for this is that in deponents, it is the verbalizing head V that *non-canonically* merges an agent DP. While this head is present in all finite contexts, it is absent in some non-finite contexts like (34) and (35), in which the mismatch is suspended (I discuss this generalization in more detail in Section 5.4).

If this is true, the derivation of a deponent verb proceeds similarly to that of the self-benefactive in (31), with the introduction of the surface subject DP below v[AG]. As in self-benefactives, this means that v[AG] will be spelled out as non-active because vP[AG] does

not introduce an external argument DP, and because the trace of a moved DP does not count for purposes of voice assignment. In the following, I give a sample derivation of the deponent verb *trā́-ya-te* 'protects'. For now, I use the subscript x on V to indicate that this is a verbalizing head that introduces an agent DP.

(36) a. X Y *trā́-ya-te*
protect-VB-3SG.NONPAST.NONACT
"X protects/is protecting Y"

b.



This derivation accounts for the core properties of deponents: 1) their surface subject is an agent, 2) they are transitive, and 3) they take non-active morphology.

1) and 3) are now crucially linked to each other: deponent roots like *trā̄*, *rabh*, *gras*, etc., merge with a projection introducing an agent DP, just like active agentive verbs. The difference between the two is that the agent of a deponent verb is merged in a different structural position than the agent of a formally active verb, namely *not* in the specifier of

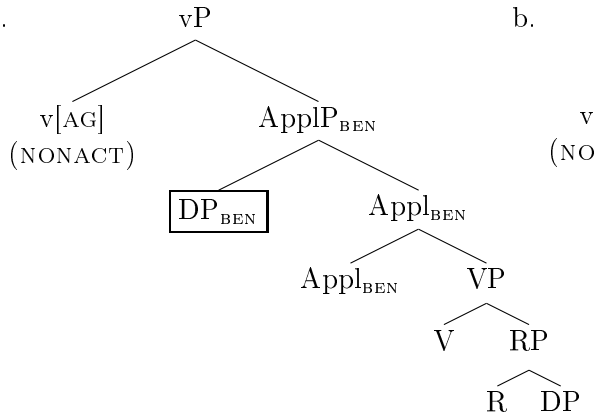
vP[AG]. We therefore expect deponents to have the same properties with respect to agentivity as active agentive verbs, and this is true.

3) is predicted by the condition on the assignment of the [NONACT] that I have argued for, namely that it is assigned when v[AG] does not introduce an external argument DP. Because the agent DP of deponent verbs is introduced below v[AG] by the verbalizing projection V_x, non-active morphology on deponents is derived by the same mechanism as in canonical middle verbs. Since deponents use exactly the same morphology as canonical middles with respect to participial morphology and inflectional endings, this is a desirable outcome.

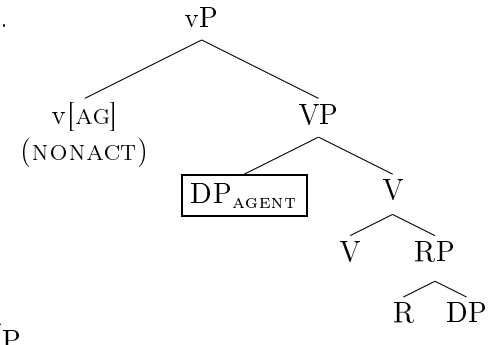
2) is unproblematic because we have already established that transitivity and accusative case do not depend on the presence or absence of [NONACT] on v[AG], but I will come back to this point below in Section 4.4.

This analysis covers the basic properties of deponents, and it furthermore offers a straightforward way of understanding the diachronic development of deponents. Basically, all that needs to happen to create a deponent is the reanalysis of a canonical non-active transitive verb in which the surface subject starts out below vP (an experiencer or self-benefactive argument, for example) as a non-active transitive verb with an agent subject. I illustrate this for a self-benefactive in (37). (37a) shows the structure of a self-benefactive before raising of the benefactive argument to subject position, (37b) shows the reanalyzed deponent structure, likewise before raising. The boxed DP is the one undergoing the reanalysis.

(37) a.



b.



Although none of the deponents listed in Chapter 3 can be synchronically analyzed as self-benefactives, some of them may have arisen from oppositional self-benefactive middles diachronically, for instance Greek *aínumai* 'take, seize'. For this to happen, the benefactive argument would have to be reanalyzed as an agent, presumably triggered by the loss of benefactive semantics of (37a). If there is no (self-)benefactive meaning that could serve as a cue for positing the presence of the projection Appl_{BEN}, a language learner would be confronted with a paradoxical situation: an agentive, transitive verb whose subject appears to be an agent, but which has non-active morphology. If the learner has successfully acquired the canonical distribution of active and non-active morphology in her language, she knows that a canonical agent should trigger active morphology. She can therefore either "correct" the apparent mistake and switch to active morphology, or posit a non-canonical middle with a low agent, since this would be compatible with the mechanism that triggers non-active morphology. In the latter case, the learner has successfully acquired a deponent. The loss of Appl_{BEN} can be understood as "structural simplification" in the sense of Roberts and Roussou (2003). The same reanalysis process can be applied to the development of certain experiencer arguments into agents, for example the development of experiencer verbs denoting mental states into speech act verbs that was mentioned in Section 2.3.3.

Crucially, the fact that canonical middles select the head v[AG] makes this reanalysis possible, since it makes accusative case and agentive semantics in a formally non-active verb available. In other words, the fact that deponents have direct objects with structural case *and* non-active morphology provides the cue to the learner that they select v[AG].

To summarize, this analysis of deponency explains both their synchronic behavior and provides a relatively simple account of their diachronic development from canonical middles. In Chapter 5, I show that it makes the right predictions with respect to non-finite deponent formations and the absence of deponency in languages like English.

However, it also raises a number of questions with respect to the nature of the category V_{x} and the thematic role it assigns. The two crucial problems are the following:

- What is the nature of the category V_x?
- How can the role of the argument introduced by V_x be understood in terms of semantic compositionality and syntactic licensing?

These questions are addressed in the next section.

4.4 Motivating "low agents"

The proposal that the agent arguments of deponents are introduced "non-canonically" below v[AG] raises a number of questions with respect to θ-role assignment, the Uniformity of Theta Assignment Hypothesis (UTAH), and the nature of the lexical entry of deponent roots.

Starting with the last point, it is clear that we cannot avoid the conclusion that deponents are *somehow* lexically specified for mismatch behavior in verbal contexts. There is nothing in the meaning or argument structure of deponent verbs themselves that can be held responsible for their mismatch behavior, since it a well-known fact that deponents usually have formally active synonyms or near-synonyms in Greek-type languages—verbs with the same (or very similar) meaning and the same syntactic behavior which take the expected active morphology. Examples include:

Table 33. Active/deponent synonyms

Language	Deponent verb	Active verb	Meaning
Latin	*hortor*	*moneō*	'encourage, incite
	tueor	*servō*, *salvō*	'keep safe, watch over, protect'
	fūror	*clepō*, *rapiō*	'steal, rob'
Hom. Greek	*erúomai*	*phúlassō*	'protect, guard'
	eíromai	*erōtáō*	'ask, question'
	daíomai	*skhízō*	'divide, separate'
Modern Greek	*skarfizome*	*epinoo*	'contrive, devise'
	(meta)hirizome	*hrizimopio*	'use'
	katarieme	*anathematizo*	'curse'

In other words, the argument structure of deponent verbs alone cannot be responsible for their mismatch behavior, since the same argument structure usually triggers active morphology.

I propose that deponents differ from these verbs in that they are lexically specified to select a particular verbalizing projection, namely one that also merges an agent argument. The lexical entry of Vedic *trā* 'protect', for instance, could be described as follows:

(38) $\sqrt{tr\bar{a}}$[AGENT]/_V_x

Which can be loosely translated as "if you merge an agent, merge it in V_x". Only deponent roots have this type of lexical entry, since we would not want the "regular" agentive verbs of table 33 to select V_x. This entry predicts non-active morphology on verbs that have it, since in verbal contexts their agents will always be introduced below vP, thus pre-empting the mechanism which would trigger active morphology.

Note that the difference in lexical entries between a deponent and a non-deponent agentive

verb under this proposal is minimal: while the agent argument of a non-deponent root like Ved. $\sqrt{han}$ 'slay' is independent of that verb's verbalizing morphology, it is linked to it in the case of a deponent like Ved. $\sqrt{tr\bar{a}}$ 'protect'.

It must be stressed that both this type of lexical entry and the one used by, e.g., Embick and Bjorkman require some form of early insertion of deponent roots. As Embick (2000: 210) himself notes in connection with his proposed [PASS] feature on deponents, it requires that at least deponent roots are inserted early in the derivation, since their idiosyncratic lexical feature affects Spell-Out. While voice morphology itself is a property of Spell-Out, the merger of the mismatch-triggering projection V_x is clearly a syntactic operation and causes problems for classic DM approaches which assume late insertion of roots (Halle and Marantz 1993, Harley 1999, recently defended by Haugen and Siddiqi 2013 and Harley To appear). I have no solution to this at present, but it is a problem that any account that anchors mismatch behavior in the lexical entry of particular verbs has to face.

A more serious problem that this account creates is the introduction of a DP in a structural position that is dissociated from where its θ-role is canonically assigned. This is a violation of the UTAH, according to which thematic roles are always linked to particular structural positions:

(39) The Uniformity of Theta Assignment Hypothesis (UTAH):
Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. (Baker 1988: 46)

Specifically, UTAH rules out "cases where (...) the Agent can be either the specifier of vP or the specifier of VP" (Adger 2003: 138), which is exactly what is being proposed here. While the minimalist program has dispensed with D-structure, and the status of theta roles is contested, some version of UTAH is nevertheless implicit in much recent work on argument structure, and the solution proposed here will be a problem for any version of it in which particular (classes of) DPs are associated with particular structural positions.

However, Baker's original formulation of the hypothesis is vague, and a number of modi-

fications have been proposed. While a complete discussion of the relationship between lexical semantics, verbal argument structure, and syntax is outside the scope of this thesis, there is one particular avenue of research that could provide a solution to the problem. There is a growing amount of literature that suggests that arguments (be they external or internal) are not determined by the lexical entry of a verb, but by functional projections associated with event structure. This is most explicit in the work of Borer, who argues that "arguments are assigned interpretation in functional specifiers of nodes associated with event structure" (Borer 2004: 290, see also Borer 1994 and 2005), but similar proposals of a connection between argument structure and event structure, with varying implementations, have been proposed by Kratzer (1996), (2004), Arad (1996), Ramchand (1997), (2008), Ritter and Rosen (1998), Doron (2003) and (2005), among others. Doron's approach is particularly relevant and will be discussed in more detail in the following section.

In general, the solution proposed here recalls what Arad (1996) calls a "finer-grained semantics" approach to θ-structure and apparent UTAH violations (based on Pesetsky 1995: 13ff.):

(40) *Finer-grained semantics*, Arad (1996: 217):
"[W]hat looks like one thematic role is in fact two distinct roles, and therefore may be associated with two different positions."

In its strongest version, we would have to argue based on (40) that the formally active and the deponent verbs in table 33 differ with respect to the thematic roles of their external arguments, however subtle that difference may be, and that each is associated with a different structural position. This claim is clearly too strong: there is no useful and general enough criterion that could possibly distinguish the external arguments of the active verbs in table 33 from the deponent verbs. Moreover, unlike in the case of the Hebrew intensive verbs in which unergative behavior is associated with a particular type of verbal morphology (see below), there is no comparable correlation between verbal morphology and deponent behavior.

A weaker version of the claim would state that there is some correlation between thematic

aspect and deponent behavior, without explicitly specifying a particular semantics for the agent of deponents. In the following, I argue that there is some evidence for this weaker claim in Vedic and Greek. For some background, I first discuss Doron's analysis of the Hebrew intensive template.

4.4.1 Agency and Aspect

Hebrew

Doron (2003), (2005), and Alexiadou and Doron (2012) argue that Hebrew provides evidence for a link between different types of agentivity and thematic aspect (lexical aspect, *Aktionsart*). According to Doron, Hebrew has different types of *agency heads* which determine different kinds of external arguments of a given root. This distinction is based on the three different "root templates" in Hebrew, the simple, intensive, and causative templates. These three templates interact with three categories of voice in Hebrew, active, middle, and passive. The following table, from Alexiadou and Doron (2012: 6), summarizes the possible patterns (two of the nine possible ones are unattested).

Table 34. Hebrew verbal templates

	Simple	Intensive	Causative
Active	*a-a*	*i-e*	*h* + *i-i*
Middle		*u-a*	*h* + *u-a*
Passive	*n* + *i-a*	*t* + *i-a*	

Depending on the template, consonantal roots receive different interpretations. Doron (2005) argues that the agency templates intensive and causative correspond to functional heads which specify the type of external argument a root is going to take. The causative head γ specifies that it will be a cause, while the intensive head ι specifies that it will be an actor. The simple template does not correspond to a designated functional head and assigns

the unmarked role "agent". Doron uses "actor" for the role that is usually termed "agent", that is, "the active performer of the event" (Doron 2005: 155), which is usually linked to animacy, intentionality, and volition. Her use of "agent", on the other hand, is much broader and roughly means "participant in the action".

While the agency heads determine the type of thematic role an external argument will take, the DP expressing this role is still introduced by a higher functional head v, as in other accounts following Kratzer (1996).

Technical details aside, what is relevant here is that Doron's approach explicitly links agentivity to the intensive template. That is, all intensive *active* formations in her approach, whether transitive or intransitive, are predicted to be unergative and take an actor as their external argument, and this is apparently the case (Doron 2005: 162). Moreover, the intensive head does not increase valency, while the causative one does. Examples of the intensive and simple templates are given in table 35 (from Doron 2005: 156).

Table 35. Hebrew intensive verbs

Root	Simple verb	Intensive verb
rqd	*raqad* 'dance'	*riqed* 'perform dancing'
qpc	*qafac* 'jump'	*qipec* 'jump up and down'
'p	*'af* 'fly'	*'ofef* 'perform flying'
hlk	*halax* 'walk'	*hilex* 'perform walking'
xzr	*xazar* 'return'	*xizer* 'court'

In general, this approach is similar to that of Borer (2005), who derives thematic aspect from different functional projections associated with different types of internal arguments ("quantity" and "non-quantity" nominals). If the lexical-aspectual properties of verbs differ depending on the type of internal argument they take, one can in principle assume that the same might hold for different types of external arguments.

The relevance of this approach for the analysis of deponency proposed here should now be clear. If verbalizing morphology related to thematic aspect can determine different types of thematic roles of external arguments, it would hardly be surprising if they also syntactically introduced these, in line with general principles of semantic and syntactic compositionality. There is no evidence for this in Hebrew, and it must be emphasized that in Doron's approach it is still *v* that syntactically introduces the external argument, while its semantic role is determined by a lower functional projection (an "agency head"). Departing from Doron, to apply her general insight about the connection between agency and lexical aspect to deponents, one would have to argue that 1) deponents are likewise linked to a particular type of thematic aspect, and 2) the projection that determines thematic aspect also syntactically introduces an agent DP and assigns it its thematic role. There is some evidence for this in Vedic and Greek.

Vedic and Greek deponents

Aspect has a different status in the languages discussed in Chapter 3. In Hittite and Latin, verbs basically distinguish between a past ("perfect" in Latin, "preterite" in Hittite) and a non-past ("present") stem.

In Vedic and Ancient Greek, on the other hand, verbal stem formation is tied to both *Aktionsart* and viewpoint aspect. Verbs usually make both an imperfective ("present") stem and a perfective ("aorist") stem, besides a separate perfect stem. Leaving aside the perfect for now, we find a number of different "stem forming" suffixes for both the present and the aorist in Vedic and Greek:

(41) Vedic

a. Present: Ø, *-a-*, *-ya-*, *-aya-*, *-na-/-n-*, *-no-/-nu-*, reduplication, etc.

b. Aorist: Ø, *-s-*, *-iṣ-*, *-a-*, reduplication, etc.

(42) Greek

a. Present: Ø, *-e/o-*, reduplication, *-ske/o-*, *-nā-*, *-n-*, etc.

b. Aorist: Ø, *-s-*, *-e/o-*, reduplication, etc.

These suffixes usually also trigger certain accent/ablaut properties of the roots they combine with (e.g., the reduplication found in the present stem has different properties from that found in the aorist stem). Some of the present stem forming suffixes moreover modify the event structure/*Aktionsart* of the base root. For example, Vedic *-aya-* forms causatives, Ionic Greek *-(e)sk-* makes iteratives, etc. It has been argued that *all* these different suffixes (at least the "present stem" suffixes) were originally linked to different *Aktionsart* types (Rix 1986, LIV^2: 10f.).

What is relevant is that the suffixes in (41a) and (42a) can only combine with imperfective viewpoint aspect, while the suffixes in (41b) and (42b) only combine with perfective viewpoint aspect. That is, there is an implicational relationship between thematic aspect as encoded in stem formation and viewpoint aspect, which also means that the a. and the b. suffixes cannot co-occur.

While deponency in Greek and Vedic is not linked to any particular stem forming suffix, there is a connection between deponency and stem formation more generally:

(43) Generalization: Deponents in Vedic and Greek only make a (primary) present stem, while alternating verbs with the same argument structure usually make both an present and an aorist stem.

To illustrate this, the following tables contain ten of the most commonly used alternating verbs in Vedic and Greek and their present and aorist stems (all forms are 3sg. for Vedic and 1sg. for Greek).[6] As above, "alternating" means that these verbs can take both active and non-active morphology, and that non-active morphology in each case is associated with one

[6]I am leaving aside the perfect for now, but note that the Vedic and Greek perfect is not perfective. In other words, a Vedic root that makes both a present and a perfect stem would not be a counterexample to this generalization.

of the canonical oppositional uses discussed in Section 2.2.

Table 36. Alternating verbs in Vedic

pres.act.	pres.mid.	aor.act.	aor.mid.	
kṛṇó-ti	*kṛṇu-té*	*ákar-Ø*	*ákṛ-ta*	*kṛ* 'make'
tanó-ti	*tanu-té*	*átan-Ø*	*áta-ta*	*tan* 'stretch'
dádhā-ti	*dát-te*	*ádā-t*		*dā* 'give'
dádhā-ti	*dhat-té*	*ádhā-t*	*ádhi-ta*	*dhā* 'place'
punā́-ti	*punīté*, *páva-te*	*ápāvī-t*	*ápaviṣ-ṭa*	*pū* 'cleanse'
bhája-ti	*bhája-te*	*ábhāk-Ø*	*ábhak-ta*	*bhaj* 'divide'
mā́rṣ-ṭi	*mṛṣ-ṭé*	*ámṛkṣa-t*	*ámṛkṣa-ta*	*mṛj* 'wipe'
vṛṇák-ti	*vṛṇk-té*	*ávark-Ø*	*ávṛk-ta*	*vṛj* 'twist'
stṛṇā́-ti	*stṛṇī-té*	*ástar-Ø*	*ástṛ-ta*	*stṛ* 'strew'
tíṣṭha-ti	*tíṣṭha-te*	*ásthā-t*	*ásthi-ta*	*stā* 'stand'

Table 37. Alternating verbs in Greek

pres.act.	pres.mid.	aor.act.	aor.mid.	
ag-ō	*ágo-mai*	*ḗgago-n*	*ēgagó-mēn*	'lead'
dídō-mi	*dído-mai*	*édōk-a*	*edó-mēn*	'give'
ékh-ō	*ékho-mai*	*éskho-n*	*eskhó-mēn*	'have, hold'
kalé-ō	*kaléo-mai*	*ekáless-a*	*ekalessá-mēn*	'call'
lég-ō	*légo-mai*	*éleks-a*	*eleksá-mēn*	'gather; say'
leíp-ō	*leípo-mai*	*élipo-n*	*elipó-mēn*	'leave'
peíth-ō	*peítho-mai*	*epépitho-n*, *épitho-n*	*epithó-mēn*	'persuade'
trép-ō	*trépo-mai*	*étrapo-n*	*etrapó-mēn*	'turn'
títhē-mi	*títhe-mai*	*éthēk-a*	*ethé-mēn*	'put, place'
khé-ō	*khéo-mai*	*ékhe(u)-a*	*ekheuá-mēn*	'pour, scatter'

While more examples are easily found for alternating verbs, things are different for deponents. *Per definitionem*, these never have formally active forms, but so far we have no reason not to expect an alternation between a formally non-active present and a formally non-active aorist stem. But this is not the case: The majority of Vedic and Greek deponents only makes a present stem, but not an aorist stem. Table 38 illustrates this for Vedic (all forms are 3sg. unless otherwise indicated).

Table 38. Deponent verbs in Vedic

pres.	aor.	
indh-é	1sg.opt. *idhī-mahi* (7x)	*idh* 'ignite'
ījá-te		*īj* 'drive, impel'
ī́ṭ-ṭe		*īḍ* 'praise'
1pl. *kṣadā-mahe*		*kṣad* 'arrange, serve'
jóguv-e		*gu* 'call, praise'
3du.ipv. *gráse-tām*		*gras* 'devour'
2du. *taṁsaye-the*		*taṁs* 'push, shake'[7]
2sg. *trā́ya-se*	2sg.ipv. *trā́sva* (10x)	*trā* 'protect'
dáya-te	1sg.opt. *diṣīy-a* (1x)	*dā/day* 'distribute'
pátya-te		*pat* 'rule'
bā́dha-te	*bādhiṣ-ṭa* (1x)	*bādh* 'beset, oppress'
máṁha-te		*máṁ* 'be generous, give'
1sg. *rabh-e*	*árab-dha* (1x)	*rabh* 'seize'
vánda-te	3sg. *vand-i* (1x), 1pl.opt. *vándiṣī-mahi* (1x)	*vand* 'praise'
sū́-te		*sū* 'give birth to'

While 9 out of 15 deponents have no aorist at all, 4 have an aorist stem that is attested only once or twice in the entire corpus. Moreover, 4 of the 6 verbs that have an aorist stem at all

[7] One formally active aorist form is attested in the Rigveda, see Appendix B.

make an *s*-aorist, using the productive aorist suffix *-s-/-iṣ-*. The alternating verbs in table 36, on the other hand, use different aorist types, in particular one in which the verbal inflection is (descriptively) added directly to the root ("root aorists"). This aorist type is practically non-existent in deponents (*idhī-mahi* in the first line is the only secure instance). The conclusion must be that speakers only sporadically tried to form aorists to deponent verbs, even though non-deponent verbs *with the same argument structure* have no problem making both a present and an aorist stem, and if they did, they used the productive, unmarked *s*-aorist.

The situation is similar in Greek. In the alternating category (table 37) we find a number of different aorist formations, including the productive *s*-aorist, but also the thematic aorist, the reduplicated aorist, and the synchronically unproductive root aorist. While 12 out of 26 Homeric deponents make no aorist at all, 12 out of the 14 that do make an aorist use the *s*-aorist[8] and Stahl (1907: 73) confirms that this observation holds for post-Homeric Greek as well.

[8]All except for *arómēn* (thematic aorist) and *edékto* (root aorist) in the second column of the following table; but the latter verb also has an *s*-aorist already in Mycenaean Greek. Note that the *-s-* of the aorist is lost by regular sound change in *anēnámēn* and *olophūrámēn*.

Table 39. Deponent verbs in Greek

present	aorist	meaning
aínu-mai		'seize'
anaíno-mai	*anēná-mēn*	'refuse, deny'
arnéo-mai	*ērnēsá-mēn*	'refuse'
árnu-mai	*aró-mēn*	'carry off, win'
daío-mai		'divide, distribute'
datéo-mai	*edassá-mēn*	'divide up'
dékho-mai	3sg. *dékto*; *déxato*	'accept, receive'
dízē-mai		'seek'
erépto-mai		'bite off'
érū-mai, erúo-mai, rhúo-mai	*(er)rūsá-mēn*	'protect, defend'
eúkho-mai	*euxá-mēn*	'pray, declacre'
kaínu-mai		'excel, surpass'
kélo-mai		'exhort, command'
lísso-mai	*ellisá-mēn*	'beg, pray'
maío-mai	*emassá-mēn*	'seek'
médo-mai		'take care of'
mémpho-mai		'blame, reproach'
mḗdo-mai	*emēsá-mēn*	'plan, devise'
mnáo-mai		'take care of; court'
olophűro-mai	*olophūrá-mēn*	'lament, bewail'
óno-mai	*ōnosá-mēn*	'scorn'
péno-mai		'work at, attend to'
ponéo-mai	*eponēsá-mēn*	'work at, attend to'
sḯno-mai		'rob, plunder'
titúsko-mai		'make ready, prepare'
pseúdo-mai	*epseusá-mēn*	'lie, tell a lie'

Moreover, there are no instances in Vedic of a deponent that *only* makes an aorist but no present, and there are only two potential cases in Greek (see Appendix D). I summarize the distribution found in Vedic and Greek in the following table.

Table 40. Deponents and aspect in Vedic and Greek

	pres.act.	pres.mid.	aor.act.	aor.mid.
a. Alternating	✔	✔	✔	✔
b. Deponent 1	✗	✔	✗	✗
c. Deponent 2 (rare)	✗	✔	✗	✔
d. Deponent 3: Not attested	✗	✗	✗	✔

While alternating verbs make both a present and an aorist stem (line a.), deponents usually only make a present stem (line b.). If they do make an aorist stem, it implies a primary present stem (line c.). Deponents cannot make only an aorist stem (line d.).

This is odd given that alternating verbs of the same argument structure can have a primary aorist, as shown above, and it is also odd when compared to canonical middle-only verbs (non-oppositional middles of the type discussed in Section 2.3) which show no clear aspectual preference. In the following tables, I list ten of the most common canonical non-oppositional middles in Vedic and Greek (cp. Sections 3.2.2 and 3.3.2).

Table 41. Canonical middles in Vedic

Present	Aorist	
ā́s-te		*ās* 'sit'
caṣ-ṭe		*cakṣ* 'appear; perceive'
nása-te	1pl.opt. *nasī-mahi* (1x)	*nas* 'unite with'
pádya-te	*pā́d-i*	*pad* 'fall'
búdhya-te	*ábodh-i*	*budh* 'wake up'
mánya-te	*áma-ta*; *mansīṣ-ṭa*	*man* 'think'
mṛṣya-te	2sg. *mṛṣ-thās* (3x)	*mṛṣ* 'forget'
róca-te	*roc-i* (2x)	*ruc* 'shine'
vṛṇī-te	*vṛ-ta* (4x)	*vṛ* 'choose'
śay-e	2sg. *aśayiṣ-ṭhās* (3x)	*śi* 'lie'

Contrary to deponents, Vedic canonical middles usually make an aorist stem. While there are some *s*-aorists, we find many more root aorists or so-called "passive aorists". For many of the latter two, the comparative evidence suggests that they are relatively old formations. In other words, canonical middles are clearly more comfortable with having an aorist than deponents are.

In Greek too, canonical middles usually have both a present and an aorist (using all the available aorist suffixes).

Table 42. Canonical middles in Greek

aído-mai	*ēidesá-mēn*	'be in awe of'
boúlo-mai		'wish'
gígno-mai	*egenó-mēn*	'be born; become'
érkho-mai	[act. *élutho-n*]	'come, go'
hê-mai		'sit'
híe-mai	*eeisá-mēn*	'speed, hasten'
hiknéo-mai	*hikó-mēn*	'reach, arrive at'
maíno-mai	[act. *emanē-n*]	'rage'
péto-mai	*eptá-mēn*	'fly'
peútho-mai, puntháno-mai	*eputhó-mēn*	'learn'

To summarize, we have not found evidence that suggests that the external arguments of deponents are associated with a particular type of thematic aspect in Vedic and Greek. We have, however, seen that they are primarily associated with verbal stem forming morphology that makes present stems and triggers imperfective viewpoint aspect. We could therefore specify the lexical entry of Vedic and Greek deponents as follows, based on the general entry for deponents proposed in Section 4.3:

(44) $\sqrt{trā}$[AGENT]/_ V_ι

"If you merge an agent, merge it in V_ι"

V_ι is used as a cover symbol for all stem forming suffixes that trigger imperfective viewpoint aspect ("present stem"). The similarity to Doron's functional projection ι is intentional, since $V\iota$ likewise stands for functional projections below v relating to thematic aspect.

It must be stressed that there is no evidence for a correlation between deponency and aspect (thematic or viewpoint) in Modern Greek or Hittite, but aspect is encoded very differently in these languages, so this finding may not be surprising.

More evidence for a connection between deponency and thematic aspect may come from Latin, however.

Latin

In Latin, a number of deponents (and "non-active-only" verbs more generally) take verbal morphology associated with iterativity either diachronically or synchronically. The synchronic suffix *-ī̄sc-* contains an element **-sk-* that seems to have made iterative, durative, or habitual verbs in Proto-Indo-European (cp. Fortson 2010: 99) and is attested in this function in, e.g., Greek ("Ionic iterative", Bechtel 1924: 215, Schwyzer 1939-71: I, 710ff.) and Hittite ("imperfective" *-šḱe-*, cp. Hoffner and Melchert 2008: 318ff.).

In Latin, a number of non-active verbs take *-ī̄sc-*, including some agentive ones (cp. Leumann 1977: 536, Weiss 2009: 407). Since most of these are deverbal, I include their derivational base when it is known.

Table 43. Latin non-active *īsc*-verbs

Verb	meaning	base
ap-īscor	'reach, attain'	*apiō*
com-, re-min-īscor	'imagine; recall'	**menior*
nanc-īscor	'reach, obtain'	*nanciō*, *nancior*
ulc-īscor	'punish'	
pac-īscor	'bargain, agree'	(*paciō*)
oblīv-īscor	'forget'	
pro-fic-īscor	'set out, march forth'	*pro-faciō*
fat-īscor	'fall apart'	[*fatīgō*]

A larger number of deponents take the synchronic iterative suffixes *-tā-* and *-itā-* (also called "frequentative", "repetitive", and "intensive", see Leumann 1977: 547ff., Weiss 2009: 401f.). They often act as synchronic replacements of their base verbs (which are usually likewise formally non-active) and do not have specifically iterative semantics.

Table 44. Latin non-active *-(i)tā*-verbs

Verb	Meaning	Base
hor-t-or	'incite'	(*horior*)
im-it-or	'imitate'	(**imor*)
lic-it-or	'offer, bid vigorously'	*liceor* 'bid'
med-it-or	'reflect on'	(?)*medeor* 'heal'
min-it-or	'threaten'	*minor* 'threaten'
sec-t-or	'pursue, follow eagerly'	*sequor* 'follow'
tū-t-or	'protect, guard'	*tueor* 'watch, examine'

However, since the derivational basis in these cases is usually also deponent, it is difficult to say whether the non-active inflection is a property of the stem formation or not. Moreover,

the association only goes in one direction: while a large number of Latin deponents takes either *-īsc-* or *-(i)tā-* (11 out of the 26 in Appendix E; *-īsc-*: 4, *-(i)tā-*: 7), not counting combinations with preverbs), both suffixes are widely used with active inflection elsewhere.

If there is a syntactic or semantic motivation for non-active morphology in iteratives (cp. Berez and Gries 2010 on Dena'ina (Athabaskan) middle iteratives), a further step would be to argue that the functional projection associated with iterative morphology also introduces an agent argument in non-canonical iterative middles. However, the situation in Latin needs further study before such a claim can be made, and the data discussed here should be taken as a very tentative data point on the connection between thematic aspect, non-active morphology, and deponency.

Georgian deponents

Another language in which deponent behavior apparently coincides with a particular thematic aspect is Georgian.

Tuite (2002), (2007) discusses a number of Georgian verbs with passive morphology and active syntax and argues that they are semantically similar to middle-only verbs in Greek and Latin.

The Kartvelian verbal category "subjective version" is marked by a prefix *(-)i-* and has been described as semantically similar to the Indo-European middle. Broadly speaking, it indicates that an action affects, benefits, or generally implicates the subject. The prefix *(-)i-* is also shared by a class of passives called "prefixal passives"; presumably this passive suffix historically developed out of the subjective version marker.

In this class, we find a number of verbs that take the prefixal passive marker, but are syntactically active. In contrast to deponents in Vedic or Greek, however, they "contrast with active, true passive, or medioactive verbs formed from the same root" (Tuite 2007). That is, they are deponent in particular tense/aspect stems, but behave regularly in others and therefore are descriptively semi-deponents. What is interesting about them, however, is that the formally passive deponents have a very specific meaning compared to the corresponding

"primary" verb forms. In Tuite's words, "semantically, deponents, in contrast to actives, express repeated, habitual actions, sometimes with the implication that they are characteristic of the subject."

However, unlike in the case of Vedic and Greek deponents, these properties do not follow from the selection of a particular *Aktionsart* suffix, but from the passive morphology itself.

I illustrate this with some of Tuite (2007)'s examples (glosses are my own since he does not provide any).[9]

(45) Georgian deponents (from Tuite 2007 (TS = thematic suffix):

a. ***i**-ts'er-eb-a*
PASS-write-TS-3SG.S
'writes to sbdy., informs sbdy. through writing, letters'

b. ***i**-tsokhn-eb-a*
PASS-chew-TS-3SG.S
'ruminates, eats in an ugly, unpleasant fashion'

c. ***i**-p'udr-eb-a*
PASS-powder-TS-3SG.S
'puts powder on one's face'

d. ***i**-gin-eb-a*
PASS-curse-TS-3SG.S
'curses, utters curse words'

e. ***i**-k'bin-eb-a*
PASS-bite-TS-3SG.S
'bites somebody or something; has the habit of biting'

According to Tuite, all of these verbs have corresponding "primary" verb stems in which the syntax matches the meaning.[10] The primary verbs corresponding to the "mismatch verbs" in (45) are the following:

---

[9] I am very grateful to Nikoloz Anasashvili for his judgments and comments on the Georgian data.

[10] The form *its'ereba* in (26a) can also have the expected passive reading, but none of the other deponents cited here can.

(46) a. *ts'er-s*
write-3SG.S
'writes' (active)

b. *tsokhn-i-s*
chew-TS-3SG.S
'ruminates, chews [cud]' (active)

c. *p'udr-av-s*
powder-TS-3SG.S
'powders' (active)

d. *a-gin-eb-s*
PRVB-curse-TS-3SG.S
'curses, swears at' (active)

e. *h-k'ben-s*
PRVB-bite-3SG.S
'bites' (medioactive)

Not all of the deponents in (45) are agentive and transitive (Tuite uses the term in the broad sense that I argue against in Section 2.4). Many are intransitive, but lack the expected passive meaning. However, there are a few transitive ones in addition to the ones in (45):

(47) a. ***i**-t'q'obin-eb-a*
PASS-inform-TS-3SG.S
'informs sbdy.'

b. ***i**-dzlev-a*
PASS-GIVE-3SG.S
'gives to sbdy.'

c. ***i**-lots-eb-a*
PASS-bless-TS-3SG.S
'pronounces words of blessing'

d. ***i**-khvets'-eb-a*
PASS-ask-TS-3SG.S
'asks for sth. imploringly'

Examples of transitive constructions are given in (48). The arguments take the same case marking as in active imperfective clauses from the same verbs, namely NOM-ACC, the agree-

ment morphology on the verb cross-references the subject.

(48) a. Student-i Parisi-dan ts'eril-eb-s i-ts'er-eb-a
student-NOM Paris-from letter-PL-ACC PASS-write-TS-3SG.S
"The student writes/is writing letters from Paris"

b. Student-i ts'eril-s i-khvets'-eb-a
student-NOM letter-ACC PASS-ask-TS-3SG.S
"The student asks/is asking for a letter"

The verbs are imperfective and can apparently have both a generic or habitual reading, like the English simple present, and a continuous/progressive reading.

While the Georgian prefixal passive "deponents" are not completely parallel to the Indo-European cases that I have focused on so far, there are two crucial similarities: 1) There is a mismatch between morphological form and expected function, and 2) this mismatch happens in the context of a particular aspectual/*Aktionsart* configuration (habitual or iterative).

Summary

In this section, I have discussed more evidence in favor of the claim that deponent behavior is linked to a relatively low functional verbal projection "V_x". I have provided evidence that this projection is linked to a particular interpretation in some languages: iterative or habitual in Georgian and maybe Latin, and more generally to "present stem" morphology in Vedic and Greek. This is reminiscent of Doron's analysis of the Hebrew intensive template, in which the external argument is associated with a particular thematic role determined by thematic aspectual morphology.

This area clearly needs further study. It is not clear why non-active morphology in general and deponent behavior in particular should be associated with any particular kind of thematic (or viewpoint) aspect, and I have no explanation for this at this point. However, these observations should provide a good starting point for further research into the nature of mismatch verbs and canonical middles.

4.4.2 A brief note on semi-deponents

At first glance, the revised lexical entry for deponent roots suggested in Section 4.4.1 and repeated in (49) seems to provide a convenient starting point for understanding semi-deponent behavior. Semi-deponents are usually defined as verbs that take non-active morphology in particular "tense-aspect" stems, but otherwise take (canonical) active morphology.

(49) $\sqrt{tr\bar{a}}$[AGENT]/_ V_ι

"If you merge an agent, merge it in V_ι"

At this point, we have no reason for assuming that the conditioning environment for mismatch behavior is always V_ι, rather than a verbalizing projection that triggers perfective viewpoint aspect, say, V_α (cp. "aorist"). It seems that this situation is actually attested in Latin, where we find semi-deponents that are mismatch verbs in the perfect (using the periphrastic perfect), but formally active verbs in the present.

Table 45. Latin semi-deponents

Active present	Non-active perfect	Meaning
gaudeō	*gāvīsus sum*	'rejoice, am glad'
audeō	*ausus sum*	'dare, am bold'
soleō	*solitus sum*	'am accustomed to'
fīdō	*fīsus sum*	'trust'

To capture this pattern (deponent in the perfect, but active in the present), we could modify the lexical entry in (49) to something like (50):

(50) $\sqrt{}$ROOT: $V_\alpha \longrightarrow$ [AGENT]

"If you select V_α, merge an agent in V_α"

This would lead to a mismatch only in the cases in which the specified V type is selected. If a different V is selected, on the other hand, canonical active morphology would surface.

There are a number of reasons why this entry cannot work, unfortunately. First, the four verbs in table 45 are the only ones in Latin exhibiting this pattern (see Flobert 1975: 496ff.), and it is clear that they have the wrong argument structure to fit my definition of deponency, i.e., their surface subject is not an agent, and they therefore cannot have a lexical entry of the type (50). Moreover, three of these verbs also seem to have had old synthetic, formally active perfects: *gaudeō*: *gāvīsī* (Liv.Andr.), *audeō*: *ausī* (Cato), *soleō*: *soluī* (Enn.), although their age of these is somewhat contested (Livingston 2004: 38f. argues convincingly that at least *gāvīsī* and *ausī* are younger than their respective participles). Flobert (1975: 494ff.) suggests that the solution may come from the dual nature of Latin *-tus*, which makes both adjectival and verbal passives (cp. Anagnostopoulou 2003, Embick 2004b on this distinction), and that the "perfect" forms in table 45 are actually adjectival/stative passives that were integrated into the verbal paradigm of these verbs. Taken together, these verbs should not be the basis of generalizations about the behavior of semi-deponents.

The Greek future at first glance seems to be a more promising candidate. As already mentioned, it very often triggers non-active morphology in verbs that are formally active (or alternating) in the present and aorist.

Table 46. Greek semi-deponents/future

Active present	Non-active future	Meaning
aeídō	*aeísomai*	'(will) sing'
akoúō	*akoúsomai*	'(will) hear'
hamartánō	*hamartḗsomai*	'(will) miss, fail'
baínō	*bḗsomai*	'(will) walk, go'
gignṓskō	*gnṓsomai*	'(will) know'
klaíō	*klaúsomai*	'(will) cry, lament'
pínō	*píomai*	'(will) drink'
pléō	*pleúsomai*	'(will) sail'
pheúgō	*pheúxomai*	'(will) flee'

More examples are easily found. However, this case is not ideal for testing semi-deponency, either, since unlike the very small class of deponents discussed in Chapter 3, the Greek future semi-deponents are much more widespread and moreover found with a variety of different verb classes, many of which do not have the right argument structure to fall under the narrow definition of deponency argued for in Section 2.4. Rather, the middle morphology in these cases seems to be a property of the suffix. The Greek future suffix *-se/o-* goes back to a suffix that made desiderative stems in Proto-Indo-European, that is, it originally had the same status as other *Aktionsart*-related verbalizing suffixes (cp. Section 4.4.1 above).[11] Scattered references to a connection between inherently desiderative verbs ('want', 'wish', 'choose', 'desire') and middle morphology are found in Kemmer (1993: 78ff., 131, 269). Kemmer suggests that at least 'choose' is inherently self-benefactive, and a self-benefactive analysis of synthetic desideratives could derive their non-active morphology. It would also explain why the Greek future suffix, at least at the older stages of the language, is in complementary distribution with other verbal stem forming suffixes (cp. table 46; in a number of cases, the future is moreover suppletive from a different root). On the other hand, the situation in Classical Greek suggests that this suffix developed into a modal marker, since in the future passive it is found after the stem forming morphology (see Section 5.2 for a structural analysis of the Greek passive marker) and closer to the T/AGR complex.

(51) Classical Greek future passive:

deikh-thé-se-tai
show-PASS-FUT-3SG.NONPAST.MID

"It will be shown"

Note that the future passive, like the Vedic present passive (Section 5.1), always triggers non-active morphology; this must be a feature of the future suffix and not of the passive suffix, since the latter by itself always takes active morphology (see Section 5.2).

[11] For discussions of the development of the desiderative suffix(es) in the different Indo-European languages see, e.g., Jasanoff (2003: 132ff.), Fortson (2010).

To summarize, the two instances of semi-deponency that are usually discussed in the literature (the Latin perfect and the Greek future) cannot be argued to instantiate "mismatches" in the narrow sense that I have proposed. In Latin, the verbs that fall under this category are experiencer/psych verbs, and in Greek the middle morphology found in the future and especially the future passive seems to be a canonical function of the future suffix. There are no other good cases of semi-deponency in these languages that I am aware of,[12] and I suspect that the reason is that entries of the shape (50) do not exist (that is, entries that specify a property of a categorizing projection for a given root, rather than a property of one of its arguments).

Because of these problems, I have avoided a general discussion of so-called "semi-deponents" so far. The patterns that are usually discussed under this label may not constitute a natural class and certainly need further study.

4.4.3 More on *v*[AG]

After discussing the nature of V_x in more detail, we still need to say something about the problem for θ-role assignment that this proposal poses. Recall that in the tradition of Kratzer

[12] There is one other potential pattern in Greek, in which a number of verbs with a middle-only present make formally active aorists (with the same meaning and syntax as the corresponding middle present). This observation goes back to Watkins (1969: 101) (cp. also Hollifield (1977: 66f.), who discusses the association of full grade thematic presents with zero grade thematic aorists more generally). Examples include:

Table i. Greek middle present—active aorist pairs

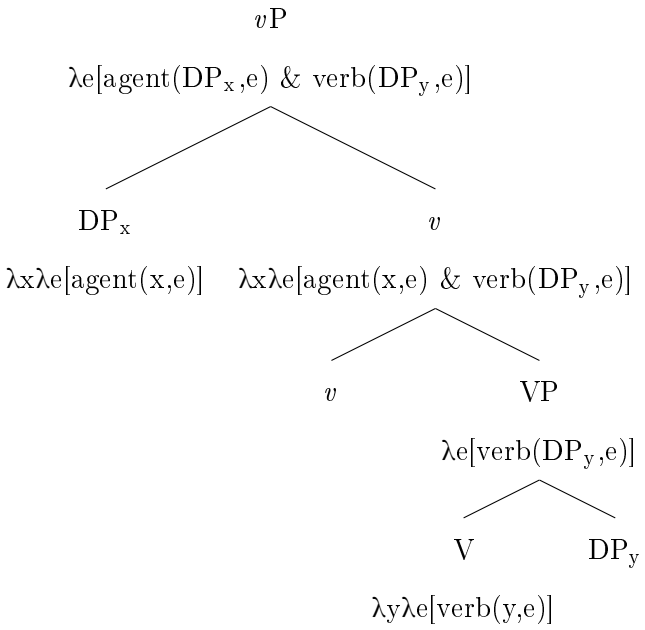
Mid. present	Act. aorist	
dérko-mai	*édrako-n*	'see'
ereúgo-mai	*érugo-n*	'belch out'
érkho-mai	*élutho-n*	'come, go' (suppletive)
lázo-mai	*él(l)abo-n*	'take'
meíro-mai	*émmoro-n*	'divide, share'
trephó-mai	*étrapho-n*	'grow'

What is interesting about this synchronic "voice suppletion" pattern is that it looks like some Greek *media tantum* preferred to avoid a synchronic middle aorist, instead opting for a formally active aorist. However, this pattern has the same problem as the future deponents discussed in the main text, since it too cross-cuts the division between canonical and non-canonical middles, and the zero grade thematic aorist moreover has a very complicated prehistory that may also play a role (see Jasanoff To appear). This pattern is therefore also not the best starting point for studying semi-deponency under the narrow definition of deponency.

(1996) which I follow here, the agent θ-role is semantically introduced by v and syntactically saturated through the merger of a DP in Spec.vP. I illustrate this in (52) based on Kratzer's semantics (I again use vP instead of VoiceP).

(52) a. λxλe[agent(x,e) & verb(theme,e)]

b.



It is clear that my proposal, in which the agent is introduced below vP, leads to a problem for θ-licensing and compositionality. On the one hand, it would be unwise to modify Kratzer's account, since this gives us the right syntax, semantics, and morphology for agentive transitive verbs with active morphology ("canonical actives"), as argued above, and we should not modify it based on the evidence of a small number of problematic non-canonical forms. But if we leave Kratzer's model intact and add a low agent to the picture, we are faced with a possible violation of UTAH, the theta criterion, or the Case filter.

As a solution to this conundrum, I want to propose that we can weaken the link between the semantics of v[AG] and its specifier. As is clear from (52), Kratzer's model explicitly links the agentive semantics to this functional head. Embick (1997) stresses that it is v[AG] that adds these semantics, independently of whether or not a specifier is introduced (cp. Section 4.3 above). This raises a more general question, however: how is the agent variable saturated in cases in which v[AG] does not merge a DP in its specifier? Recall that this is not just a

problem in deponents, but also in self-benefactives under the movement analysis proposed in Section 2.2.5, and more generally in other "unaccusative" structures that select v[AG] (non-active causative alternation verbs, reflexives, and experiencer verbs). In all these cases, v[AG] does not have a DP in its specifier, leaving its θ-role unsaturated.

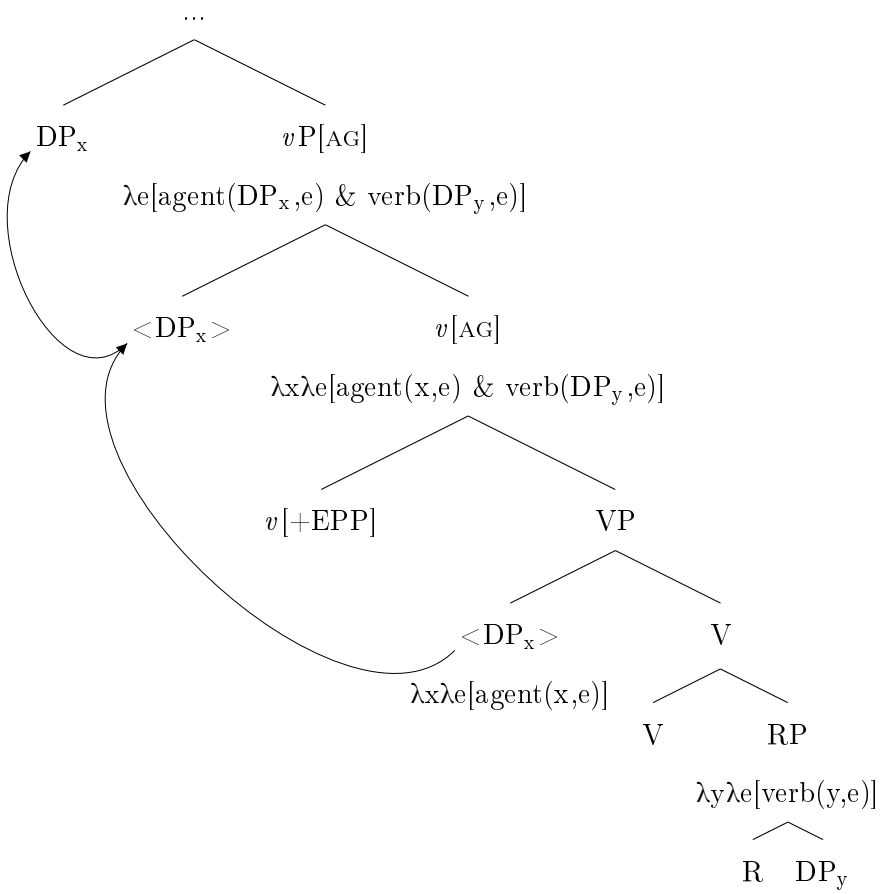
The solution to this is precisely the dissociation of the semantics of this head from its syntactic requirements. Following Chomsky (2000), (2001), we could assume that v^* (= v[AG]) has an EPP-feature, like "φ-complete" T. This means that it will attract a DP in its c-command domain to its specifier, which will then in turn be attracted by T (cp. also McGinnis 1999 for arguments for movement to Spec.vP).

The only additional assumption would then be that the moved DP (or its trace) can saturate the argument variable introduced by v[AG].

This approach solves the problem of the semantics of specifier-less v[AG] for morphologically non-active experiencer verbs, self-benefactives, unaccusatives, as well as for deponents, since in all these the closest DP will be forced to move to Spec.v[AG], independent of its own thematic role, while leaving Kratzer's semantics of that head itself intact. This proposal also saves us from the potentially embarrassing situation of having two DPs, but only one case assigner (T).

I illustrate this proposal for deponents in (53). Note that I am switching back to using RP for the projection introducing the internal argument and VP for the verbalizing projection, but this could easily be modified to fit Borer (2005)'s approach in which the internal argument, too, is in the specifier of a aspectual functional projection.

(53) Deponent verb:



The agent DP starts out in the specifier of the verbalizer, moves to Spec.v[AG] because of its EPP-feature, thereby saturating its argument variable, and then (eventually) to TP where it agrees for nominative case. Because DP$_x$ is closer to v[AG] than DP$_y$ (the theme), the latter will never risk being attracted by the EPP-feature, but agrees for accusative case with v[AG] just like in canonical transitive clauses.

The only remaining question is the denotation of VP, which I have left open for now. This question is connected to the precise nature of the event structure/thematic aspectual semantics introduced by this projection, which I discussed in Section 4.4.1, but must be deferred to future research.

Finally, a general problem of the post-syntactic account is that it cannot predict whether or not v[AG] will merge a DP. That is, there is no *syntactic* mechanism that prevents the

introduction of a second agent DP in deponents, or of an agent DP in experiencer verbs or self-benefactives, for that matter. On the other hand, if the reason why experiencer verbs and self-benefactives select v[AG] is the need for valuation of accusative case on the internal argument, we risk creating a lookahead problem. As far as I can tell, this problem is also inherent in other "selectional" approaches to structure building, for example Bruening (2013)'s approach to the passive. Bruening argues that the passive head selects a VoiceP (= v[AG]) "that has not yet projected its external argument." (p. 22). This likewise raises the question of how Voice/v[AG] "knows" that it must not project. To solve this problem of "optional" specifiers, we may ultimately have to appeal to the enumeration, which provides an agent in the case of, e.g., transitive (benefactive) constructions, but not in the case of their self-benefactive counterparts. This then boils down to the question of how a speaker knows that she is going to use a an active causative or a non-active anticausative, or a benefactive rather than a self-benefactive, which is not a question of the syntactic apparatus.

4.5 Summary

In this chapter, I have provided evidence in favor of the view that the external arguments of deponents are agents, confirming the intuition that these verbs are "mismatch" verbs. I have argued that their complex behavior cannot be captured by assuming a lexical feature [PASS] or [NONACT] on deponent roots. Instead, I have drawn on the connection between deponent behavior and verbal stem formation to argue that deponents are lexically specified to introduce their agent DP *below* v. Since this means that v itself will not have a specifier, this will always trigger non-active morphology.

This analysis crucially relies on the "post-syntactic" approach to active/non-active voice morphology sketched out at the end of Chapter 2, in which voice morphology is determined after syntactic operations have taken place. I have shown in this chapter that this approach correctly derives active and non-active morphology in its canonical environments, and that it also provides the mechanism for deriving deponent behavior. I have furthermore argued that deponents are lexically specified to select an agent-introducing verbalizing projection, and

that in some languages there is evidence that this projection is also responsible for thematic aspect (iterative, intensive, or habitual). However, it must be stressed that the last point is a preliminary observation based on Vedic, Greek, and maybe Latin and Georgian that does not seem to have correlates in Modern Greek and Hittite and that needs further study and confirmation.

Finally, I have argued that we can keep a unified Kratzerian semantics for v[AG] if we accept that the DP saturating its agent variable can start out below v[AG] under certain circumstances.

In the next chapter, I show how this approach extends to other aspects of the voice systems and deponents of these languages, in particular to the interaction between middle and passive morphology, active-only verbs, and the question of mismatch behavior in non-finite formations of deponents.

Chapter 5

Implications: active, middle, and passive in bivalent voice systems

The analysis of deponents presented in the previous chapter accounts for their synchronic behavior in the Indo-European languages under discussion, using the same mechanisms that are used for deriving canonical middles, as well as (canonical) actives. It is now time to tie up the loose ends that have only been hinted at so far. These concern the status of middle vs. passive in Indo-European (Section 5.1), of *activa tantum*, or "active-only" verbs (Section 5.2), the question of why English-type languages do not have deponents (Section 5.3), and the behavior of non-finite formations of deponent verbs (Section 5.4).

5.1 Middle and passive

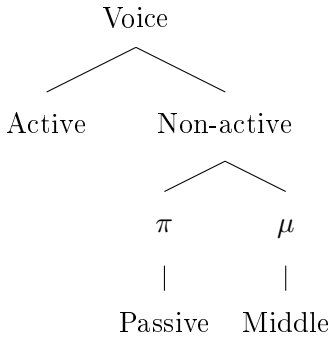
While the languages under discussion have in principle bivalent voice systems, most of them also have distinct passive constructions at least in some tense/aspect combination. This raises the question of the difference between middle/non-active and passive voice, and of structurally locating different types of voice morphology.

Recent generative approaches to passive voice can be roughly divided into two categories. The first assumes that a single head v/Voice is responsible for the difference between active

and passive or active and non-active Voice, usually determined by the presence or absence of a feature [PASS/NONACT] on Voice (e.g., Kallulli (2006), Bjorkman (2011), somewhat differently Collins (2005)). Both Passive and non-active in these accounts are usually argued to be valency-reducing (by demoting/suppressing the agent).

The second type of account treats active, middle, and passive as separate instantiations of the Voice head, each with its own properties. For example, Alexiadou and Doron (2012) propose the following cartography for the Voice head, which can either merge as π (passive) or μ (middle) (similarly Bruening (2013)). If none of these is merged, active emerges as default.

(1)



Both middle and passive are valency reducing, and some languages may have only one of them, resulting in a bivalent system (for example, they analyze Modern Greek as having only μ). This account predicts that a given predicate can have only one voice head which can come in different "flavors", and this in turn predicts that the values active, middle, and passive are in complementary distribution. This cannot capture the passivization facts of Vedic and Greek, in which passive morphology can co-occur with active or middle morphology. To briefly restate the facts, Vedic passives formed with the suffix *-yá-* obligatorily co-occur with middle morphology:

(2) a. *ad-yá-te*
eat-PASS-3SG.NONPAST.MID
"is (being) eaten"

b. *bhri-yá-te*
carry-PASS-3SG.NONPAST.MID
"is (being) carried"

c. *yuj-yá-te*
yoke-PASS-3SG.NONPAST.MID
"is (being) yoked"

In Greek, the situation is more complicated. The Greek passive *thē*-aorist co-occurs with active morphology, as in (3), while the future passive co-occurs with middle morphology, as in (4) (note that this is the post-Homeric/Classical Greek system).

(3) Greek passive aorist:

a. *e-lou-thē-n*
PAST-wash-PASS-1SG.PAST.ACT
"I was washed"

b. *e-blḗ-thē-n*
PAST-hit-PASS-1SG.PAST.ACT
"I was hit"

c. *ḗkh-thē-n*
PAST.drive-PASS-1SG.PAST.ACT
"I was driven, led"

(4) Greek future passive:

a. *lou-thḗ-so-mai*
wash-PASS-FUT-1SG.NONPAST.MID
"I will be washed"

b. *blē-thḗ-so-mai*
hit-PASS-FUT-1SG.NONPAST.MID
"I will be hit"

c. *akh-thḗ-so-mai*
drive-PASS-FUT-1SG.NONPAST.MID
"I will be driven/led"

Crucially, neither in Vedic nor in Greek do active and middle morphology ever co-occur. This is the first piece of evidence suggesting that the cut should be made between active/middle on the one hand and passive on the other.

The second piece of evidence comes from the syntactic contexts in which middle and passive morphology are found. As we have seen, canonical uses of middle morphology encompass a

wide range of syntactic contexts and predicates (anticausatives, reflexives, self-benefactives, mediopassives, statives, (some) denominatives, etc.). The passive, on the other hand, occurs in much more circumscribed contexts and is unambiguous in its interpretation. Cases in which the passive seems to vacillate between an anticausative and a passive interpretation, as in Modern Greek (cp. Alexiadou and Doron 2012) and Modern Albanian (cp. Kallulli 2006, 2007) occur in languages with synthetic bivalent voice systems in which both constructions take the same (non-active) morphology, so that it is likely that the "passive" in these languages is really a mediopassive (see Alexiadou and Doron 2012 for arguments that Modern Greek only has a mediopassive).

Moreover, there is practically unanimous consensus that the passive is a syntactic operation that demotes the external argument—in fact, this is one of the rare points on which the various theoretical frameworks within syntactic theory usually agree, although the implementation varies (e.g., Perlmutter and Postal 1984, Baker et al. 1989, the papers in Abraham and Leisiö 2006, Alexiadou and Doron 2012, Bruening 2013, etc.). But whether or not the middle demotes an argument, and which one, is much more contested, and I have argued in this chapter that it does not (at least in languages with a bivalent synthetic voice system).

Finally, at least in Vedic and Greek we see that passive morphology actually occurs in a different structural position from active/middle morphology. While the latter are fused with the tense and agreement morphology of the inflectional endings, the passive morpheme in both languages occurs much closer to the root, in the same location as verbalizing morphology. In fact, both in Vedic and in Greek, the passive morpheme (*-yá-* in Vedic, *-thē-* in Greek) has other functions besides making passives. In Vedic, the accented passive morpheme *-yá-* is in complementary distribution with an unaccented verbalizing suffix *-ya-* that forms non-passive, mostly intransitive present stems, as in (5) a-c (but note the transitive deponent *trā́yate* in (5) d.):

(5) Vedic intransitive *-ya-*:

a. *pád-ya-te*
fall-VB-3SG.NONPAST.MID
'falls'

b. *búdh-ya-te*
awake-VB-3SG.NONPAST.MID
'is awake'

c. *pyā́-ya-te*
swell-VB-3SG.NONPAST.MID
'swells'

d. *trā́-ya-te*
protect-VB-3SG.NONPAST.MID
'protects'

While passive *-yá-* and non-passive *-ya-* historically go back to the same preform,[1] there is a clear synchronic difference between them: In general, passive forms are accented on the suffix, non-passive forms are accented on the root.[2] The following minimal pairs illustrate this, the a. examples are intransitive anticausatives, the b. examples are the passives of the corresponding causatives.

(6) a. *múc-ya-te*
release-VB-3SG.NONPAST.MID
'releases oneself, escapes'

b. *muc-yá-te*
release-PASS-3SG.NONPAST.MID
'is released'

---

[1] Kulikov 2012 provides a detailed study of these two suffixes in Vedic.

[2] This was also the intuition of the Sanskrit grammarian tradition in Indian antiquity, see Kulikov (2012: 715, fn. 2156), who, however, also argues in detail that it is a simplification and that the accentuation in the post-Rigvedic tradition fluctuates according to the different schools of transmission (709ff.). This point was already made by Delbrück (1888: 267), whose collection of accented and unaccented forms nevertheless shows that the generalization, although somewhat idealized, is by and large true for the Rigveda and the Atharvaveda (see also Whitney (1879: 250) on the accent fluctuation in the *ya*-class.).

(7) a. *kṣī́-ya-te*
perish-VB-3SG.NONPAST.MID
'perishes'

b. *kṣī-yá-te*
perish-PASS-3SG.NONPAST.MID
'is destroyed'

Moreover, while the accented Vedic *yá*-passives always take middle morphology, the unaccented intransitive *ya*-presents can take either active or middle endings, just like other verbalizing suffixes (see, e.g., Whitney 1879: 248ff., Macdonell 1910: 331ff.).[3]

The same is true for Greek. The passive use of the suffix *-thē-* is a largely post-Homeric development (Stahl 1907: 43, Rix 1992: 219); in Homer this suffix usually forms intransitive aorist stems.[4] Examples of this are given in (8) (these stems are found in Homer, contrast the passive aorists in (40), which are post-Homeric).

(8) Greek *-thē-* in intransitive/anticausative aorists:

a. *e-krúph-thē-n*
PAST-hide-AOR-1SG.PAST.ACT
'I hid (myself)'

b. *e-phobḗ-thē-n*
PAST-flee-AOR-1SG.PAST.ACT
'I fled'

c. *hḗs-thē-n*
PAST.sit-AOR-1SG.PAST.ACT
'I sat'

This explains why we do not find passive *thē*-aorists made from transitive deponents in Homer,

---

[3]Note that in Avestan, verbs with the cognate suffix *-iia-* either inflect as *activa tantum* or as *media tantum*, independently of whether they are passives or not (see Kellens 1984: 35f., 120ff.), but the passive use of *-iia-* in general seems to be less developed in (Old) Avestan than in Vedic (Kellens 1984: 129.

[4]The future passive is even rarer in Homer: there are only two instances of an *s*-future with a "passive" marker in Homer (Stahl 1907: 43), both of which are intransitive rather than passive and which use the older suffix variant *-ē-* instead of *-thē-*. A detailed account of the prehistory of these two suffix variants is provided by Jasanoff 2004: 161ff.

contrary to Vedic, where we do find *yá*-passives of deponents: *-thē-* had not fully developed into a passive suffix at this point.

On the basis of these observations, I propose that the functional head responsible for passivization is different from the functional head determining active/middle morphology (v). At the very least, this holds for languages with the "older Indo-European" type of voice system. While the passive head triggers a syntactic operation that demotes the external argument, the feature specification of v is the result of previous syntactic operations, as argued in Section 4.3.

To motivate this assumption further I briefly review how other approaches handle the interaction between Voice, v, and the passive. Kratzer (1996) in her seminal article already argues that there is a difference between an active and a non-active Voice head. Both take a VP complement, but while the active Voice head introduces the external argument and assigns accusative case, the non-active Voice head does neither. Chomsky (2001) calls this functional head vP, but uses a similar distinction: Transitive v* is "ϕ-complete" and assigns accusative case, while unaccusative and passive v is "ϕ-incomplete" and selects a defective V.

Kallulli (2007) and (2013), on the other hand, argues that passives select "agentive" v, v[+act] in her terminology, but lack an external argument. Thus, while passives have v[+act, -ext], anticausatives have v[+caus, -ext]. While languages like English have different morphology for those two categories, languages like Modern Greek and Modern Albanian assign the same morphology—non-active—to all instances of [-ext], leading to a surface "voice syncretism".

In these approaches, the external argument of an agentive verb is introduced in a different location in the passive (as some sort of adjunct) than in the active (in the specifier of VoiceP/vP).

On the other hand, Collins (2005) and Bruening (2013) both argue that the external argument is introduced in the same structural position in the active and the passive. Collins posits a head Voice in the passive that takes a vP complement. This Voice head is spelled out as *by* in English and as a passive affix in agglutinating languages, and it checks accusative

case on the external argument, which is merged in Spec.vP, like in the active (in the active, there is no Voice head, and v both introduces the external argument and checks accusative case). For reasons of space, I cannot discuss the details of his "smuggling" approach here, but concentrate only on the proposed division of labor between Voice and v, since this is immediately relevant to the discussion.

Bruening (2013) similarly splits passive from Voice/vP. His passive head Pass selects a Voice projection "that has not yet projected its external argument" (p. 22).

Finally, Harley (2013) provides evidence that the head introducing the external argument, Voice, is different from the head introducing event types like causation, v. Terminology aside, what the last three approaches have in common is a designated (passive) Voice head above the projection that introduces the event type and values accusative case, vP. While vP also introduces the external argument both in the active and the passive for Collins (2005) and Bruening (2013), this is done by Voice in Harley (2013)'s analysis. In these approaches, passive/Voice is above v. In Vedic and Greek, however, the passive morphemes *-yá-* (Vedic) and *-thē-* (Greek) are closer to the root than the agreement morphology expressing active and middle. I have argued so far that active/middle are values of the functional head v that introduces the external argument and is responsible for accusative case and event implicatures, much as in the other approaches outlined above. These approaches also provide evidence for a separate head Voice/Pass, but locate it above vP. I now want to argue that at least in Sanskrit and Greek, it must be below vP, occupying the same structural position as the verbalizing morphology in V that was introduced in Section 4.3. The first piece of evidence comes from the alternation between passive *-yá-* and intransitive/verbalizing *-ya-* in Vedic and between passive *-thē-* and intransitive *-thē-* in Greek, as outlined in examples (39)-(45). Co-occurrence of the verbalizing and the passivizing suffix is impossible in both languages.

In Vedic, this cannot be due to some morphonological restraint against a sequence *-(V̄)yaya-*, since there are verbs formed with the causative suffix *-áya-* that exhibit precisely this

sequence, e.g., *pyāy-áya-ti* 'makes swell' (*pyā* 'swell'), *pāy-áya-ti* 'makes drink' (*pā* 'drink').[5] One could argue that the existence of these causatives is precisely what "blocks" the formation of a passive in **-ya-ya-te* since this would look like a causative stem. However, this still would not explain why passive *-yá-* is incompatible with other types of stem-forming morphology. For example, Vedic has a verbalizer *-na-/-n-* that is infixed before the root-final consonant of certain roots, forming "nasal infix stems". The passivizer *-yá-*, on the other hand, is a suffix that follows the root, as we have seen. In principle, these two suffixes should be able to co-occur, but this is not what we find: Passives of nasal-infix stems never retain the nasal.[6] The following examples demonstrate this; the a) examples show the 3sg. of the nasal-infix present stem, the b) examples the 3sg. of the corresponding passive.

(9) a. *yu<ná>k-ti*
yoke<VB>-NONPAST.3SG.ACT
'yokes'

b. *yuj-yá-te*
yoke-PASS-NONPAST.3SG.MID
'is being yoked'

(10) a. *bhi<ná>t-ti*
split<VB>-NONPAST.3SG.ACT
'splits'

b. *bhid-yá-te*
split-PASS-NONPAST.3SG.MID
'is being split'

(11) a. *vṛ<ṇá>k-ti*
twist<VB>-NONPAST.3SG.ACT
'twists'

b. *vṛj-yá-te*
twist-PASS-NONPAST.3SG.MID
'is being twisted'

---

[5] See Jamison (1983) on this formation.

[6] I am grateful to Isabelle Charnavel for pointing out the importance of this pattern to me.

There is no reason to assume that the presence of passive morphology somehow suppresses the overt spell-out of the verbalizing morphology; it rather seems as if both compete for the same structural position and passive wins.

The same argument can be made for Greek, where the passive suffix *-thē-* alternates with aorist stem-forming morphology such as the *s*-aorist (note that the *s*-aorist and the passive aorist use different allomorphs of the 1sg.act. ending):

(12) a. *e-poíē-s-a*
PAST-make-AOR-1SG.ACT
'I made'

b. *e-poiḗ-thē-n*
PAST-make-PASS-1SG.ACT
'I was made'

(13) a. *é-du-s-a*
PAST-sink-AOR-1SG.ACT
'I made (something) sink'

b. *e-dú-thē-n*
PAST-sink-PASS-1SG.ACT
'I was sunk'

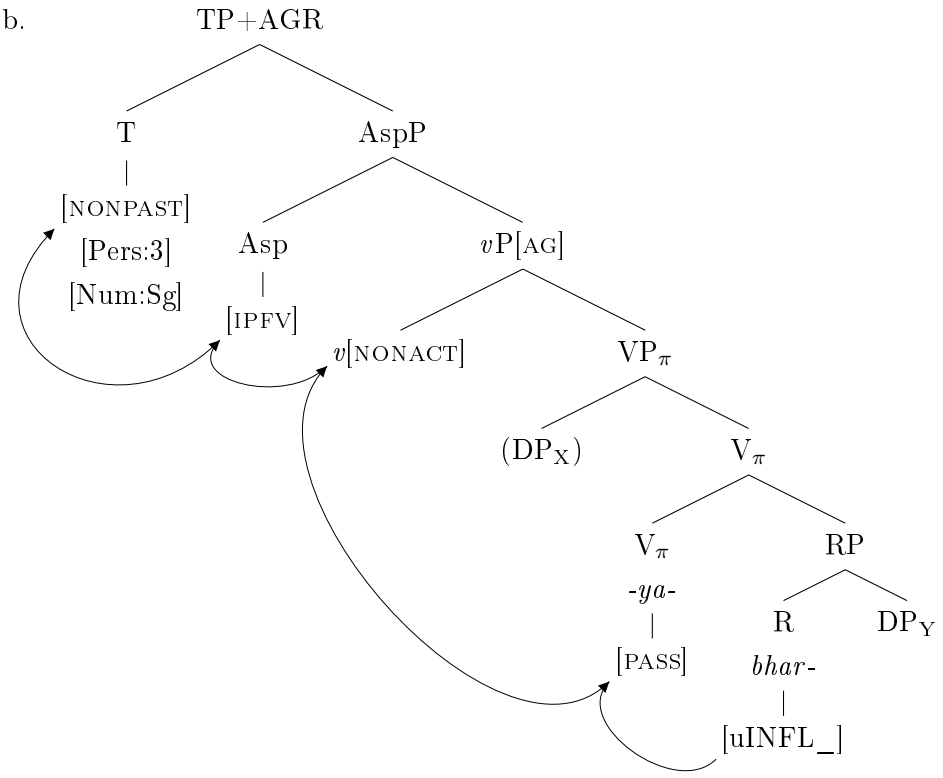
I conclude that the passive head in Vedic and Greek is below the functional head v([NONACT]), and that it is in complementary distribution with the verbalizing head V. One way of formally implementing this conclusion would be to follow Alexiadou and Doron (2012) in setting up a passive head π below vP. In their approach, π semantically introduces the external argument, but at the same time suppresses its syntactic insertion by v. Their passive head π is structurally between the (verbalizing) agency head ι discussed in Sections 4.4.1 and 4.3 and vP. Since I have just argued that VP and the passive head are in complementary distribution in Vedic and Greek, I indicate a passive head as Vπ, where π corresponds to the feature [PASS] used in other approaches. Moreover, I depart from Alexiadou and Doron (2012) in proposing that it is Vπ that introduces the demoted external argument rather than vP. A sample derivation of an agentive (non-deponent) passive is given in (14). The root node merges with the verbalizer Vπ that demotes the external argument, but can optionally syntactically introduce

it as an instrumental DP. But now we face the same situation as in the deponent in (37): The agent DP is introduced below vP and cannot be merged twice, hence v does not merge an external argument and is spelled out as non-active together with tense and agreement features. Head movement takes place as usual.

(14) Vedic present passive:

a. Y (X_{instr}) *bhri-yá-te*
carry-PASS-3SG.NONPAST.MID
'Y is (being) carried (by X)'

b.



This account predicts that passives always co-occur with non-active morphology, and this is true at least for Vedic. There are two non-standard assumptions here: 1) That the passive head Vπ is below rather than above vP/identical to vP (but see Alexiadou and Doron 2012), and 2) that Vπ introduces the agent in the passive, but vP does so in the active. I have already motivated 1) for Vedic and Greek, and I will sketch out further motivation for 2) below.

However, this analysis does not predict the morphology of the Greek passive aorist, which obligatorily co-occurs with active morphology. One way around this problem would be to assume that in Greek it is vP that introduces the external argument, like in the active (and in line with Collins 2005 and Bruening 2013). Since this would mean merging an agent DP in Spec.vP, the conditions for non-active voice assignment would not be fulfilled and active morphology would surface. Vedic and Greek would then be parametrized according to whether v or Vπ introduces the demoted agent in the passive.

While I have no conclusive evidence against such a proposal, I will argue in the next section that the Greek passive aorist is better understood in the context of *activa tantum* ("active only" verbs), and that an analysis of *activa tantum* should also be able to capture the voice morphology of the Greek *thē*-aorist.

5.2 *Activa tantum*: active as default

I have so far avoided the class of verbs that the Indian grammarians called *parasmaipadin*-verbs and which are referred to as *activa tantum* or "active-only verbs" in the Western grammatical tradition. These are verbs that *only* take active morphology, as opposed to *media tantum* which only take middle morphology and alternating verbs with can take both (depending on the syntactic context). Active-only verbs are not usually discussed as instances of "feature mismatch", and in general have received less attention in the literature than middle-only verbs (and deponents in particular). This is strange given that active-only verbs usually encompass quite a few distinctly un-active classes of predicates, like unaccusatives/inchoatives, statives, and verbs of motion. I give examples from Vedic, Ancient Greek, Latin, and Modern Greek.

(15) *Activa tantum*:

a. Vedic: *át-ti* 'eats', *ás-ti* 'is', *é-ti* 'goes', *kṛntá-ti* 'cuts', *kránda-ti* 'cries out', *jígā-ti* 'goes', *cára-ti* 'moves', *jī́va-ti* 'lives', *tṛpṇó-ti* 'is pleased', *dā́śa-ti* 'makes an offering', *náda-ti* 'sounds (out)', *páta-ti* 'flies', *bhanák-ti* 'breaks' (tr.), *muṣṇā́-ti* 'steals', *víveṣ-ṭi* 'is quick, active'.

b. Greek[7]: *ei-mí* 'am', *eĩ-mi* 'go', *ennép-ō* 'tell', *zṓ-ō* 'live', *thū́(n)-ō* 'rage, seethe', *márpt-ō* 'seize', *mímn-ō* 'stay', *pī́pt-ō* 'fall', *plé-ō* 'sail', *rhé-ō* 'flow, stream', *steíkh-ō* 'walk', *pheúg-ō* 'avoid, flee'.

c. Modern Greek: *aspriz-o* 'whiten' (tr./itr.), *kokiniz-o* 'redden' (tr./itr.), *platen-o* 'widen' (tr./itr.), *pefto* 'fall', *reo* 'flow', *meno* 'stay', etc.

The question is, then, whether active unaccusatives are a "mismatch" between morphological form and syntactic function, in the same way that deponents (in the narrow definition) are. Weisser (2010) and (2014) assumes that they are, in fact, mismatch verbs. He argues that deponents are characterized by a feature [-Active] in their lexical entry, while unaccusatives have a feature [+Active].

I disagree with such an approach for several reasons (some of which are discussed by Weisser 2010: 27ff.). First, while unaccusative behavior is a matter of argument structure of particular verb classes,[8] deponency, as I have argued here, is a property of lexical items *in the context of a particular aspectual head*. For the same reason, there is no such thing as "semi-unaccusativity". More importantly, in terms of economy we should try to avoid setting up distinct lexical diacritics for two verb classes (unaccusatives and deponents). Since there is some agreement that a lexical feature on deponents is unavoidable (cp. Embick 1998 and 2004a's [PASS] feature on deponents), we should try to derive the active morphology on unaccusatives from other, independently needed mechanisms instead of assuming an additional lexical feature [+Active] (see Embick 1997: 201ff. for more arguments against such a feature).

I propose instead that the Greek passive aorist is a subclass of Greek active-only verbs that always select the "defective" v that is underspecified with respect to agentivity and case (see Section 4.3). Because this head is never evaluated for whether or not it has an external

[7]This collection reflects the situation in Homer. Quite a few of these verbs make a formally middle future and could therefore be classified as semi-deponents.

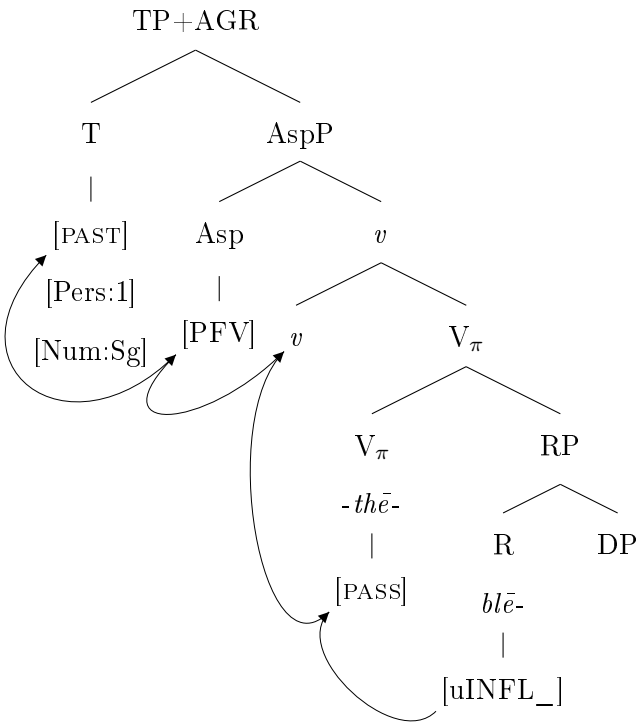
[8]The fact that there is some cross-linguistic variation in whether a particular verb is classified as unergative or unaccusative (e.g., 'forget' selects a BE auxiliary in Dutch, but a HAVE auxiliary in German) does not, in my opinion, constitute a strong argument against treating unaccusativity as a universal of verbal argument structure.

argument, it will *always* trigger default (= "active") morphology.

A sample derivation is given in (16).

(16) Greek passive aorist:

a. *e-blḗ-thē-n*
PAST-hit-PASS-1SG.PAST.ACT
"I was hit"



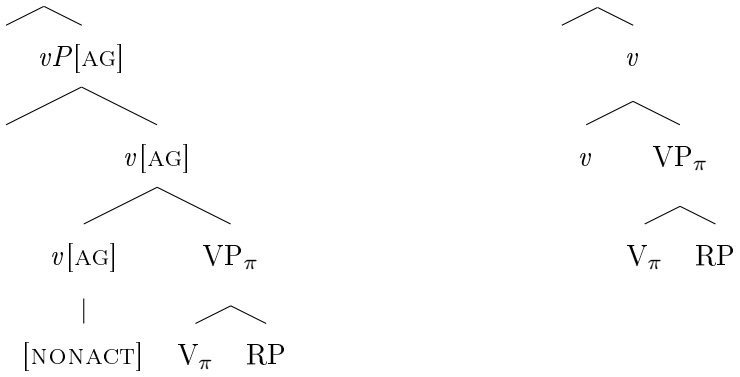
The root node merges with the passivizer which suppresses the external argument and selects (defective) v, which in turn triggers default morphology on the T+AGR head. One could argue that v in (16) could be left out completely, but the proposed parallelism with formally active anticausatives suggests that it contributes a particular kind of event semantics, similar to Alexiadou and Anagnostopoulou (2004)'s v[BECOME].

Note that under this analysis, Greek *thē*-passives differ from Vedic *yá*-passives in having a non-agentive v, while Vedic passives have v[AG]. This may seem counter-intuitive, since I have argued so far that both suffixes are also found in intransitive anticausative verbs. However, there is some evidence that the Greek passive aorist, even in Classical Greek, is different from the Vedic present passive in *-yá-*. In Vedic, the agent of a *yá*-passive can

only be expressed through an instrumental adjunct (cp. Jamison 1979, Kulikov 2012: 19f.), although this adjunct is of course not obligatory. Nevertheless, Jamison (1979: 200) counts at least 200 instances of an instrumental agent in passive constructions in the Rigveda (25 of them with *yá*-passives, the rest with passive aorists, formal middles, and, in the majority of cases, with past participles). In Greek, on the other hand, an overt demoted agent is even rarer and can occur with a variety of different prepositions (*ek*, *hupó*, *pará*, *prós*) depending on the predicate, all of which can also occur with formally active anticausatives (with or without the suffix *-thē-*, see Kulikov and Lavidas (2013: 103ff.) for more arguments that the Greek *thē*-aorist is not "a specialized passive marker" (p. 103) and Schwyzer 1939-71: 18ff. on the use of prepositional *by*-phrases in Greek passives and anticausatives). This suggests that the analysis of the Greek "passive" aorists as a subset of anticausative *activa tantum* which select a defective v is valid.

In Vedic, on the other hand, there is an accentual difference between passive *-yá-* and intransitive/anticausative *-ya-*. More relevant, however, is the aforementioned fact that passive *-yá-* always triggers non-active morphology, while anticausative/inchoative *-ya-* regularly takes active morphology, e.g., *ír̥syati* 'is/becomes angry', *kṣā́yati* 'burns', *kṣúdhyati* 'becomes hungry', *glā́yati* 'becomes weary', *tuṣyati* 'is pleased', *tŕ̥ṣyati* 'is/becomes thirsty', *pū́yati* 'is/becomes putrid', *mā́dyati* 'is/becomes drunk', *śyā́yati* 'congeals, freezes', *hr̥ṣyati* 'becomes excited', etc. These are just a few of the verbs listed and discussed by Kulikov (2012: 517ff.) as "active *ya*-presents" (there are also some that alternate between active and non-active morphology). I propose that this means that Vedic passive *-yá-* always selects agentive v[AG], as illustrated in (17a), whereas anticausative/inchoative *-ya-* behaves like Greek *-thē-* and selects defective v, cp. (17b).

(17) a. passive *-yá-*: ... b. anticausative *-ya-*: ...



Because of the different types of v selected by each construction, the Vedic one surfaces with non-active morphology, while the Greek one surfaces with default morphology.

Under this analysis, there are two ways for a verb to receive active morphology: 1) by having an external argument in the specifier of v[AG] (and v[CAUS]), 2) by selecting defective v. In both cases, default morphology (active) will be inserted at Spell-Out because the conditions for non-active are not fulfilled.

That "active" is actually default inflection is argued for by Embick (1998), (2004a), Alexiadou and Doron (2012) and implicitly assumed by Kallulli (2013). It would explain why speakers of bivalent (Greek-type) voice systems generally do not have the intuition that active anticausatives constitute a "mismatch" in the way transitive deponents do, and why *activa tantum* have received far less attention in the linguistic literature (both contemporary and ancient[9]) with respect to the question of such a potential mismatch. Moreover, the Indo-European branches that switched from a bivalent synthetic (Greek-type) voice system to periphrastic constructions generalized the older active agreement endings of the verb rather

[9]The Indian grammarians seem to have been agnostic on this point by dividing verbs into active-only, middle-only, and alternating. Latin grammarians only operated with a distinction between active and passive until the 3rd century AD, when three further *uerbōrum genera* were introduced: *neutrum* for active-only verbs like *sedeō* 'sit' and *currō* 'run', *commūne* for passive-only verbs that could have both an active and a passive reading, and *dēpōnēns* for formally passive verbs that had "laid aside" their passive function. However, Flobert (1975: 8ff.) stresses that there was a great deal of variation in the terminology used by the different grammarians.

than the non-active ones.[10] The assumption that "active" morphology is actually default (or "elsewhere") morphology is therefore warranted both on pre-theoretical and theoretical grounds.

5.3 Where have all the English deponents gone?

A puzzling problem that has only been hinted at so far is the observation that only languages with the synthetic morphological "voice syncretism" described in detail in Chapter 3 exhibit voice mismatches (for a recent formulation of this observation see Weisser 2010: 59). To illustrate what such a mismatch would look like in a language like English, consider again deponents like Ved. *trā́yate* 'protects' or Latin *sequor* 'follow'. I have argued at length that their morphology is descriptively at odds with their syntactic behavior, yet these verbs and their syntax were part of speakers' grammars.

Trying to construct formally similar examples in languages like English leads to ungrammaticality. For example, any formally passive clause with a direct object is ungrammatical:

(18) a. *Indra is protected the fire

b. *The Ṛṣi is followed Indra

The immediate explanation for this is trivial—the English passive participle cannot value accusative case, leading to a Case Filter violation in (18). In Vedic and Latin, on the other hand, non-active morphology does not affect case valuation in canonical contexts, as I have argued in Chapter 2, and we therefore do not expect it to do so in non-canonical contexts. However, this cannot be the whole story, since (18) is grammatical if translated into a periphrastic

[10] This holds at least for the Germanic, Romance, Modern Indo-Aryan, and Celtic languages, for Armenian (with a few exceptions, cp. Klingenschmitt 1982: 2f.), and also for Baltic, with the caveat that some lexical items seem to have preserved the non-active endings in the 1sg. and 2sg. (cp. Stang 1966: 405ff.); the 2sg. in Slavic in general goes back to the older non-active ending. Sporadic preservation of non-active morphology is also found in other branches as "archaism", that is, a synchronic anomaly of particular verbs. Note, however, that the opposite case (generalization of the older non-active endings, with or without a few relics of the active) is not attested anywhere in Indo-European.

As for the other branches, Hittite and Tocharian died out taking their bivalent voice systems with them, and Greek and Albanian stuck with their bivalent systems, albeit with a great deal of morphological remodelling.

perfect passive of a Latin deponent:

(19) Amphitruo Mercurium secutus est
Amphitruo.NOM Mercurius.ACC follow.PERF.PTCP.NOM.SG. is
"Amphitruo followed Mercurius"

The formation of the Latin perfect passive is structurally quite similar to that of an English passive (participle + BE-auxiliary), so the impossibility of structures like (18) in English must be caused by some more general property of its voice system rather than the particular structural configuration itself.

Moreover, this observation also extends to other periphrastic constructions that have been compared to the function of non-active morphology in Greek-type languages. We have seen that SE-constructions in, e.g., French, are used in contexts where they take accusative objects, as in self-benefactives. Nevertheless, we do not find "mismatches" in French: cases in which an agentive transitive predicate takes SE but otherwise behaves like a regular active verb.

(20) *Jean se protège les enfants
Jean SE protects the children
Intended: "Jean is protecting the children"

The only instances in which structures like (20) are grammatical are in transparent self-benefactive constructions (see Section 2.2.5, esp. fn. 13). Note that (20) does not have a self-benefactive reading, either.

To explain this lack of mismatch verbs in English-type languages, let us reiterate what triggers deponency in a Greek-type language. I have argued in Section 4.3 that the mismatch occurs because an agent DP is merged below the functional head v[AG] that is evaluated for the condition on non-active morphology (+/- ext.arg.). The fact that the agent is merged "too early" is an idiosyncratic property of particular roots, ultimately due to the diachronic development of those roots in "verbal" syntactic environments. This was formalized as follows:

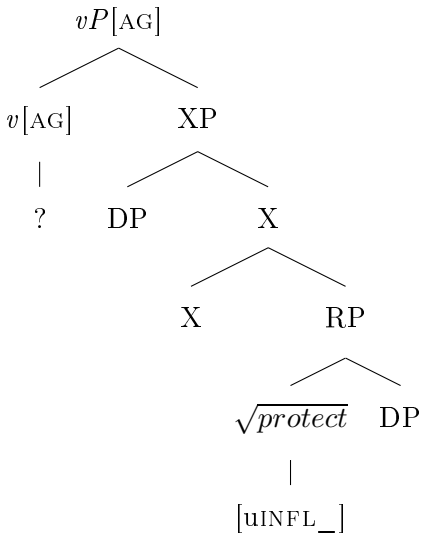
(21) $\sqrt{protect}$[AGENT]/_ V_x

Where "V_x" stands for a type of verbalizing projection below vP, the default agent-introducing

projection.

What happens if we plug this root into an English clause? The derivation would proceed like in the Vedic deponent in (45) above. Insertion of the root in (21) would trigger the merger of the external argument below vP (by the unspecified category XP), see (22). In a Greek-type language, the lack of an external argument in the specifier of vP would lead to spelling out v with a feature [NONACT], together with tense and agreement morphology. In other words, "non-active" is a property of v[AG] in such a language. However, we have no reason to assume that it is a property of v[AG] in *every* language (indicated by the question mark in (22)).

(22)



If languages are parametrized with respect to whether or not they care about having an external argument in v[AG], we derive the lack of deponents in English. It is not that English cannot have idiosyncrasies such as (21) in its lexical entries, it is just that we never see them surface because the functional projection that causes the mismatch in Greek-type languages, v[AG], is not spelled out differently if it does not have an external argument in English-type languages. This is also suggested by the history of these languages, in which the difference in "v-oriented" morphology (active—non-active) has been lost (see fn. 23), as well as by the synchronic phenomenon of "labile verbs" (e.g., Engl. *break, boil, burn*, etc., cp. van Gelderen (2011) on their prehistory).

What about roots with a feature [PASS]? First of all, we should note that such a feature is posited by Embick (1998) and (2000) solely for Greek-type languages, that is, languages where different properties of v lead to the insertion of different morphology. Concretely, this feature refers to the r-endings in Latin. To avoid confusion I will refer to this feature as [NONACT] and continue to use [PASS] only for the feature found on a separate (Voice) head. While [NONACT] is "post-syntactic" and reflects a particular property of v, [PASS] is a syntactic feature of a designated voice head that enters into an Agreement relationship with the verb (see Section 5.1).

The question is, are there advantages to assuming an Embick-style lexical entry for deponents in languages like Greek, i.e., (23) instead of (21)?

(23) $\sqrt{protect}$[NONACT]

According to Embick (2000)'s "analysis 3" (p. 208ff.), only a feature on v will have a syntactic effect (that of suppressing Merge of the external argument), while a [NONACT] (= [PASS] in Embick's terminology) feature on the root has no syntactic effect and is therefore compatible with a v that merges an external argument, resulting in a deponent.

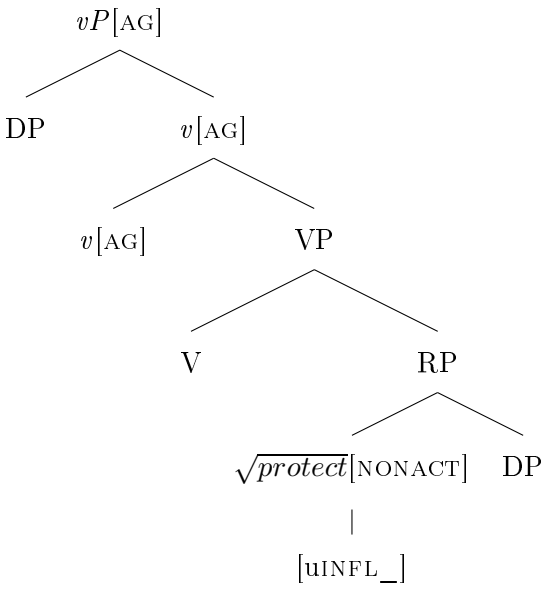
> When [PASS] is generated on v, it affects Merge: no external argument is merged with v when [PASS] is on v. However, the complement of v—namely, the Root and its argument—will contain [PASS] if the Root is deponent. From the perspective of v, the [PASS] feature in its complement has no effect on its syntactic possibilities; a v can have an external argument even when [PASS] appears with the Root. Thus, there is no contradiction with transitive deponents.
>
> Embick (2000: 208)

Phrasing is crucial here—if the presence of [NONACT]/[PASS] on v prevents the merger of an external argument, it should do so regardless of whether or not it originated there or lower (on V or R) and then incorporated into v. That is, it is not clear why "the [PASS] feature in its [v's] complement has no effect on its syntactic possibilities", unless one wants to argue

that the external argument of v is merged *before* V[PASS] incorporates into v (which seems incompatible at least with current Minimalist assumptions).

The "post-syntactic" approach fares better because it does not assume that [NONACT]/[PASS] "affects Merge". In this approach (for which I have argued in Chapters 2 and 4), a lexical entry (23) would indeed be compatible with active syntax. The external argument would be introduced by v, as in formally active agentive verbs:

(24)



The only additional assumption we would have to make is that lexical [NONACT], being the more marked feature, overrides the default active morphology that we would expect given that v has an external argument, but this is hardly problematic. As for languages like English, we do not expect lexical entries like $\sqrt{protect}$[NONACT] in the first place because English, as I have just argued, does not evaluate its v for [NONACT] anyway.

It seems, then, that on a post-syntactic approach, the two lexical entries (25a-b) equally derive deponent behavior in Greek-type languages and non-deponent behavior in English-type languages.

(25) a. $\sqrt{protect}$[AGENT]/_V_x

b. $\sqrt{protect}$[NONACT]

There are a few arguments in favor of (25a). First, it is better suited to capture the correlation

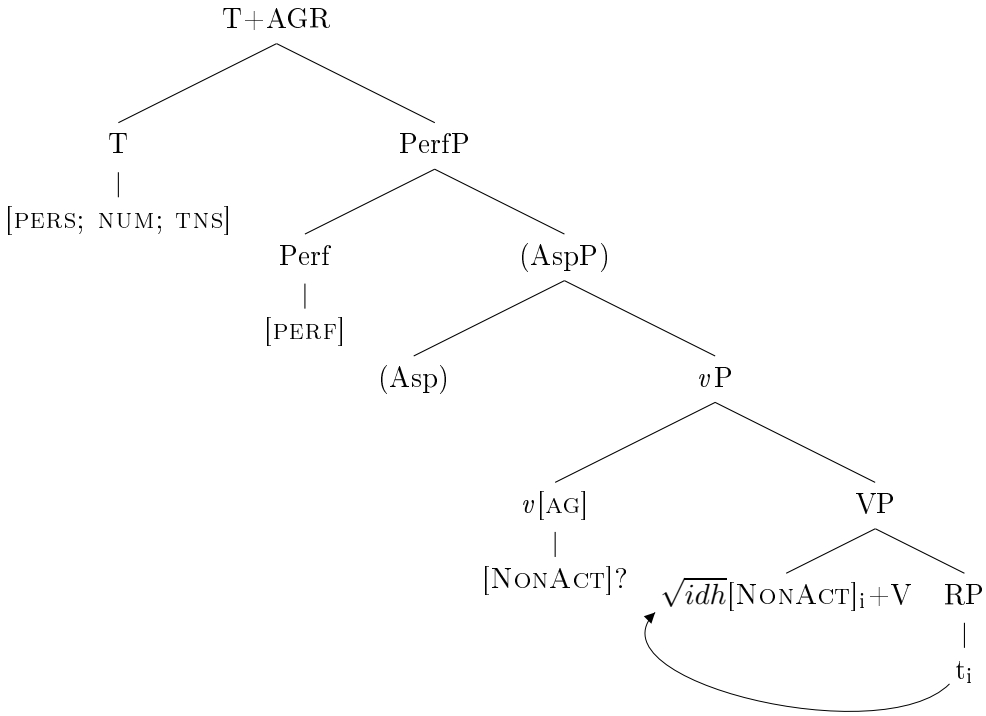
between deponency and *Aktionsart*/thematic aspect in Vedic and Greek (discussed in Section 4.3). Second, (25a) gives us an easy way of deriving semi-deponency, since the environment X could in principle be any functional head related to aspect along the verbal spine.

Finally, the morphology of the Sanskrit periphrastic perfect provides a strong argument against (25b) and in favor of (25a). As I have argued in Section 4.1, a [NonAct] feature on a deponent root cannot derive the morphology of the periphrastic passive, where voice morphology is expressed on the auxiliary rather than the root. I repeat the structure below; the problem arises because the purported lexical feature [NonAct] is "stuck" on V. The auxiliary, which picks up stranded features along the lines of Bjorkman (2011), only has access to the features of vP and higher projections.

(26) Sanskrit periphrastic perfect:

īḍ-āṃ *cakr-e*
praise-NMLZ do.PERF-3SG.NonAct

"has praised"



If the agent is introduced in the same structural position as in non-deponents (Spec.vP), we

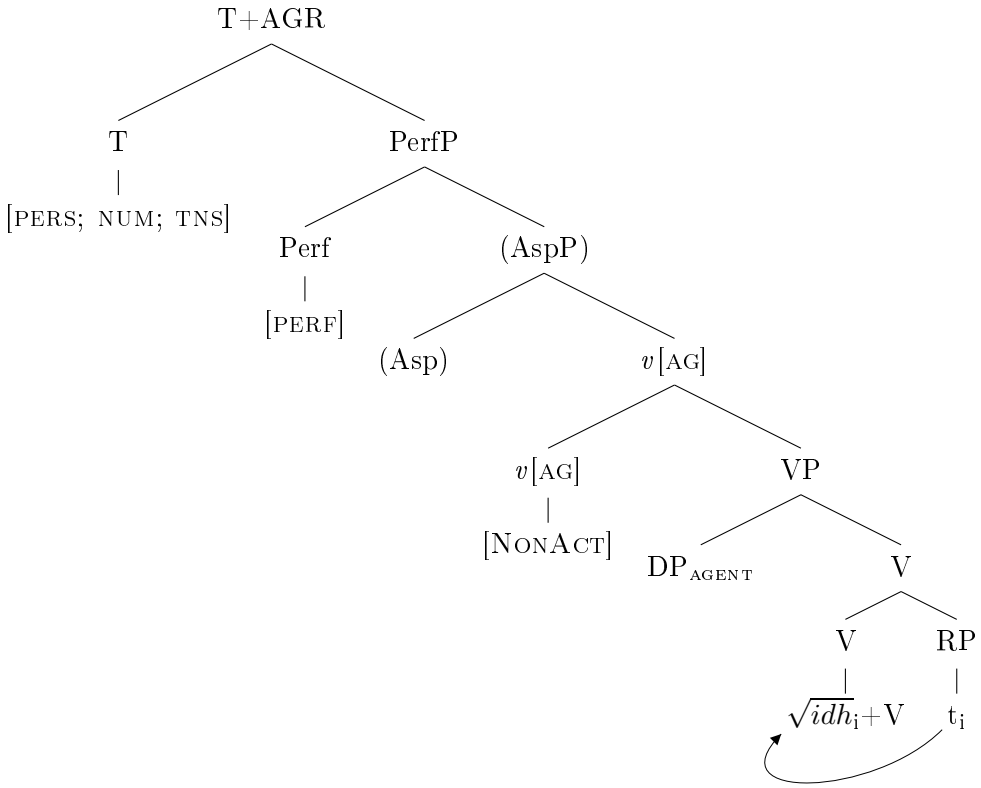
actually expect active morphology on the auxiliary.

However, we now have a solution to this problem. If the agent is actually introduced below vP, as predicted by (25a), we derive non-active morphology on the auxiliary in periphrastic deponents in the same way as in synthetic deponents. The root merges with $V_{(\iota)}$, which introduces the agent DP. V cannot move higher (this stipulation is also necessary in (26)), and the auxiliary "rescues" the stranded features on T+AGR, Perf, and v. Because v does not have an external argument, we get non-active morphology through the by now familiar mechanism. This is illustrated in (27), note that we now do not need a separate [NonAct] feature on the root, as opposed to (26).

(27) Sanskrit periphrastic perfect:

īḍ-āṃ *cakr-e*
praise-NMLZ do.PERF-3SG.NonAct

"has praised"



In cases where V *does* move to v, the auxiliary obviously does not have to rescue a stranded

voice feature. We therefore expect default ("active") inflection on the auxiliary, and this is indeed what we see in the Latin periphrastic perfect passive.

However, it must be stressed that the Latin BE-auxiliary does not alternate for voice anywhere, i.e., it is *activum tantum*. That is, the fact that we do not see non-active morphology on the auxiliary in periphrastic perfects of deponents could also be due to a morphological quirk of the particular auxiliary available in Latin. Given that the Modern Greek periphrastic passive selects the auxiliary *ime* 'be', which is non-active and likewise does not alternate, this may actually be the more likely explanation. In other words, the case of the Sanskrit periphrastic perfect is an exceptional one because Sanskrit has auxiliaries that can and do alternate for active/non-active voice and uses them in periphrastic constructions in an otherwise synthetic system. Latin and Modern Greek, on the other hand, also have periphrastic constructions in a synthetic voice system, but happen not to have alternating auxiliaries. Languages like English, French, and German do not have a voice alternation on v, and therefore the question of alternating auxiliaries never arises in their periphrastic constructions in the first place.

I believe that these general mechanisms of deriving deponents, and in particular the lexical entry type for deponents that I have proposed (repeated in (28)) can account for why we do not find deponency in English-type voice systems and why "mismatches" are a feature of Greek-type voice systems.

(28) a. $\sqrt{protect}$[AGENT]/_V_x

Moreover, the correlation between lack of deponency and periphrastic voice systems is only an apparent one. As Latin and Sanskrit show, deponency does occur in periphrastic constructions, provided the language also has morphology that is sensitive to different values of v[AG]. Since English and French lack such morphology, they also lack deponents.

5.4 Non-finite formations

In Chapter 3 I compared how deponents behave with respect to their non-finite formations. In fact, this is where we find most of the microvariation in cross-linguistic deponent behavior.

While in some languages "mismatch" behavior is continued in the participial formations (Vedic, Ancient Greek), it is apparently suspended in others (Hittite, Latin, Modern Greek). In Latin, for example, the same participial suffix is used for the present participle of deponent and non-deponent verbs: act. *amō* 'love' — *amā-ns* 'loving', deponent *sequor* 'follow' — *sequē-ns* 'following'. This has led Papangeli and Lavidas (2009) to claim that deponent behavior is dependent on the availability of a tense feature on finite T, although they do not provide an account of why this should be so. Pesetsky (2009), building on their proposal and Pesetsky and Torrego (2007)'s idea that verbs are usually lexically valued for T, argues that Latin deponents are "defective verbs that are *lexically* unable to bear T under any circumstances" (p. 217). They therefore cannot agree with the head Tns to value its interpretable, but unvalued T-feature and the copula has to be used instead to "rescue" Tns. However, this account predicts that deponents always surface as *analytic* constructions with active syntax. Pesetsky is forced to argue that the Latin synthetic *r*-forms (passives and deponents alike) are underlyingly analytic constructions that have incorporated the copula, which may be the final *-r* itself. However, the comparison with other languages with similar voice systems shows that Latin is actually exceptional in having an analytic perfect passive, and that Vedic, Ancient Greek, Hittite, and Modern Greek consistently have synthetic non-active forms. In other words, it is counter-intuitive to treat the synthetic non-active forms in Latin as unexpected. Moreover, the non-active forms in these languages have a number of other functions beside the passive, some of which can also occur in syntactically "active" environments, like deponents (e.g., self-benefactives, which also have accusative objects). Since Pesetsky's account relies on object agreement between the verb and the its complement in the passive, it will fail to predict the non-passive uses of non-active morphology.

Finally, there is no diachronic evidence that suggests that the *-r* of the Latin passive (or any other marker of non-active voice discussed so far, for that matter) is etymologically related to the copula (or some other auxiliary).

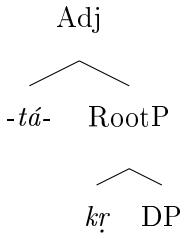
As the comparative overview in Chapter 3 has shown, languages vary in whether or not they continue deponent behavior in their non-finite formations, another indication that this

cannot be dependent on finite T. I want to propose in this section that deponent behavior in non-finite contexts rather depends on two factors: 1) the structural level at which the nominalizer attaches, in particular whether it attaches above or below vP and 2) the availability of different active vs. non-active nominalizing morphology in different languages.

Concerning the first point, I have already discussed Anagnostopoulou (2003)'s account of the structure of Modern Greek participles. In *tos*-participles ("stative participles"), the nominalizer (I follow her convention of using AdjP for this projection) attaches directly to the root. The resulting verbal adjective does not have verbalizing morphology, cannot take accusative objects, and does not occur with manner adverbs. I propose that this is also the structure of the Vedic *tá*-participle, the Ancient Greek *to*-participle, and the Hittite *ant*-participle. I repeat this structure in (29) with an example from Vedic.

(29) a. Vedic

kṛ-tá-
make-NMLZ-
'made'

b.


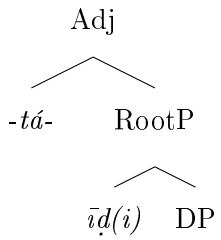
This structure also derives the "theme-orientedness" (passive readings for transitive verbs, intransitive readings for intransitive verbs) of these verbal adjectives. Since the external argument is (usually) introduced by v and (29) does not include v, the nominalizer will contain only the internal argument of transitive verbs, structurally corresponding to the sole argument of unaccusatives (assuming that this is the complement of the root node in both cases, cp. Harley 2009).

We now predict that deponent participles of this structure will behave exactly like those of other transitive verbs, and this is correct. Because the mismatch in deponents happens

between V and v[AG], neither of which is included in the structure in (29), the deponent participle will have the same passive reading as that of a non-deponent verb like *kṛ*, e.g.:

(30) a. Vedic

īḍi-tá-
praise-NMLZ-
'praised'

b.


The Vedic and Ancient Greek middle participles in *-(m)ānа-* and *-menos*, respectively, are different. They take accusative objects, occur with manner and agent-oriented adverbs, and incorporate stem-forming and aspect-related morphology, and even the morphology of the perfect stem, indicating that the nominalizer must attach quite high, at least above PerfP. This means that v[AG] is included in the structure, and since the mismatch in deponents happens between v[AG] and V, it will also happen in nominalizations that include these projections. Again, this is the correct prediction for Vedic and Ancient Greek. I illustrate this with a Vedic deponent participle in (31). Just as in finite verbs, the agent is introduced by the same projection that carries the verbalizing morphology, thus pre-empting the merger of an external argument in Spec.vP[AG].[11]

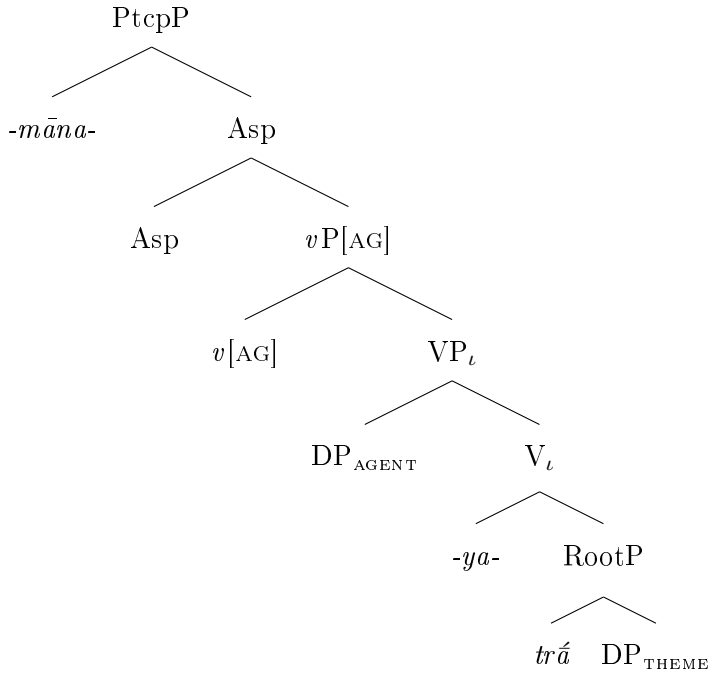
[11] I use PtcpP for the nominalizing head; other notations used include nP, NP, DP, and AdjP. The only interesting alternative to this problem of syntactic category is that of Embick (2000), who proposes that the Latin participial suffixes spell out the head Asp when the verb cannot move to T. This avoids the embarrassment of having to operate with a designated nominalizing projection of unclear categorical properties. However, this is not easily applicable to the Vedic and Greek participles under discussion here since they do not enter into (suppletive) finite periphrastic constructions as they do in Latin. My use of "PtcpP" here is therefore merely descriptive (since these forms are traditionally called "participles") and not meant as a claim about the categorical nature of these forms. Nothing hinges on this notation.

(31) a. Vedic

trā́-ya-māṇa-
protect-VB-MID.PTCP-

'protecting'

b.



The middle participle suffix *-(m)āna-* spells out the nominalizing head in the context of a specifierless *v*[AG] head, exactly parallel to finite contexts. That is, the lexical entries for the active suffix *-ant-* vs. non-active *-(m)āna-* are the following (the same holds for Ancient Greek):

(32) a. PTCP ↔ *-(m)āna-*/_ *v*[AG][NONACT]

b. PTCP ↔ *-ant-*

The mechanism that governs the distribution of active vs. non-active morphology in the participles is thus the same that governs its distribution in finite contexts (i.e., in conjunction with tense and agreement morphology). The middle participial suffix is the more specified variant, while the active one is the "elsewhere" variant with no context specifications.

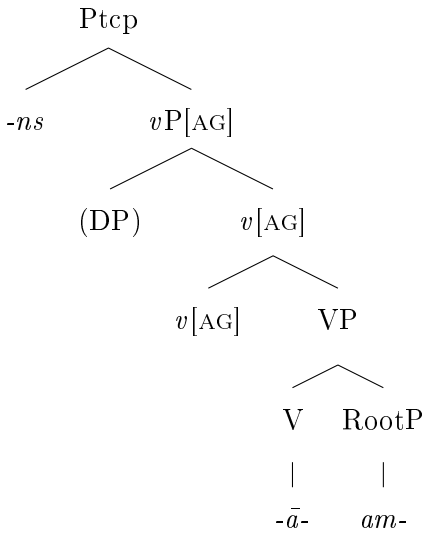
While the two structures in (31) and (32) correctly capture the behavior of deponent participles in Vedic, Ancient Greek, and Hittite, more has to be said about Latin and Modern

Greek.

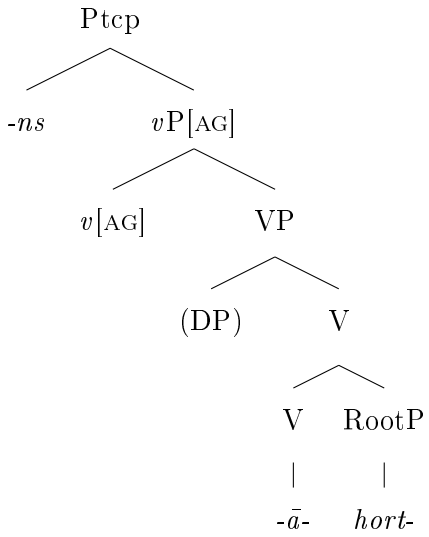
In Latin, both the "active" present participle in *-ns* and the "passive" perfect participle in *-tus* are compatible with accusative objects (for the latter, this is only seen with deponent participles) and adverbial modification, and both include verbalizing morphology (that is, the conjugational class markers of Latin). This would indicate that both attach at least above *v*P. For the present participle suffix *-ns*, we could assume the following structures for non-deponent formations like *amāns* 'loving' vs. deponent formations like *hortāns* 'exhorting' (I leave open the question of whether Asp is also included below the nominalizer, but see Embick 2000: 216ff. and the discussion below):

(33) Latin *ns*-participles:

a. Non-deponent: *amāns*



b. Deponent: *hortāns*



As in finite contexts, the external argument in the deponent participle is introduced in a non-canonical position (below *v*P) and should trigger deponent behavior. That is, we expect the same pattern as in Vedic. This is where factor 2) introduced above becomes relevant: Latin does not have a lexical entry like (32) for its present participle. That is, there is no morphological exponent of the participial suffix available that is specified for the context *v*[AG][NonAct]. All Latin has is the context-free suffix *-ns*, with the following entry:

(34) PTCP ↔ *-ns*

Because there is no more specific allomorph available, *-ns* is used independently of whether *v*[AG] has an external argument or not. This should not come as a surprise, since I have argued in the previous section that not all languages have morphology that is sensitive to this property of *v*[AG]. We could therefore imagine that this also holds for different contexts within the same language: while Vedic and Ancient Greek have a special allomorph of the participial suffix for the context *v*[AG][NonAct], Latin does not.

However, this predicts that participles in *-ns* should be found both with active and passive readings, which is evidently not the case—the participle *amāns* 'loving' is the participle of active *amō* 'I love', and not of passive *amor* 'I am loved'. That *-ns* is in principle compatible with non-active functions is shown by occasional forms like *volvēns* 'rolling' which belongs to intransitive non-act. *volvor* 'I roll' rather than to transitive act. *volvō* 'I roll something' (cp. Section 3.4.3). The synchronic association with the *active* paradigm must therefore be secondary, and may be due to factors outside of the morphosyntax of these formations (pragmatic or frequency-related, for example).

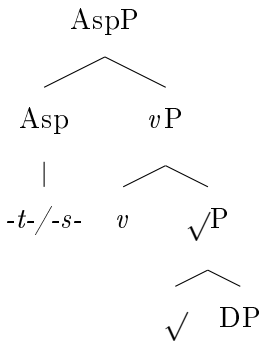
The perfect participle in *-tus* is likewise problematic. Although it is usually characterized as perfect (or past) passive participle, I have already mentioned in Section 3.4.3 that both its affiliation with the passive and with perfectivity (or anteriority) are somewhat uncertain. Although it is etymologically related to the Vedic *tá*-participle and Greek *-to-*, we cannot simply assign it the same structure (that of (29) and (30)), since it differs from both with respect to its morphological and syntactic properties. Contrary to its Greek and Sanskrit cognates, Latin *-tus* incorporates stem-forming morphology. The *-tus* participles of deponents are syntactically active and transitive (but see the Appendix for some exceptions) and can take accusative objects, while the *-tá-*/*-to-*participles of Vedic and Greek deponents have a passive reading, just as the *-tá-*/*-to-*participles of transitive non-deponent verbs. Moreover, they can occur with manner adverbs, suggesting that they have more verbal functional structure than their Greek and Vedic counterparts (the ability to occur with manner adverbs is one of the diagnostics of Anagnostopoulou 2003, Alexiadou and Anagnostopoulou 2008, and Anag-

nostopoulou 2014 for distinguishing lexical/adjectival stative participles from phrasal/verbal stative participles). The following example is taken from Embick (2000: 220):

(35) *filius ūnicē amā-tus*
son uniquely love-PERF.PTCTP.NOM.SG
"especially loved son"

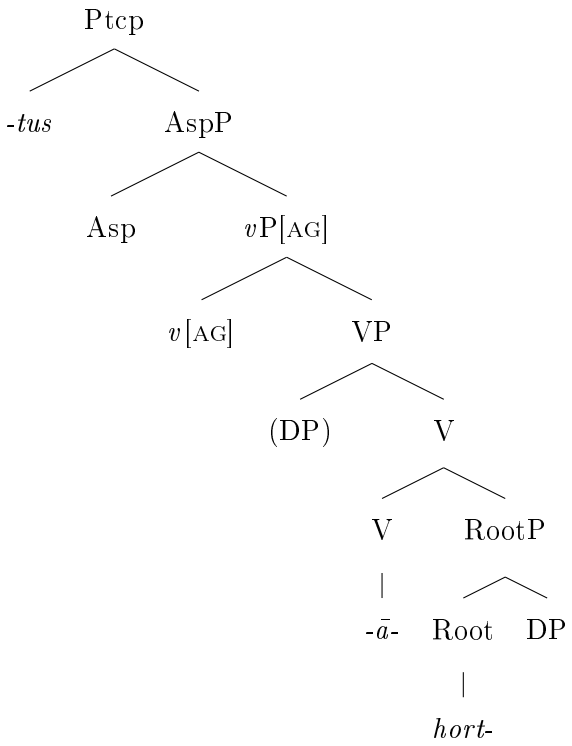
Embick argues that both *-ns* and *-tus* incorporate the aspectual head Asp and are in fact allomorphs of the same suffix, spelled out as *-ns* in the context of a feature [PRES] on Asp, and as *-t-* (or *-s-*) in all other cases. He gives the following structure for a perfect participle like *amātus* 'loved':

(36) *am-ā-tus* 'loved'



Modifying this in line with the previously discussed suffixes, this would give us the following structure for a Latin deponent perfect participle like *hortātus* 'exhorted':

(37) *hort-ā-tus* 'exhorted'



This adaption of Embick's proposal explains why deponent participles can occur with accusative objects: they contain the head that values accusative case, v[AG]. Like *-ns*, *-tus* is not sensitive to whether or not v[AG] introduces an external argument. But like in the latter case, we now predict that participles in *-tus* should be able to have both active and passive readings. Again, occasional active participles such as *iūrātus* 'having sworn' and *pōtus* 'having drunk' suggest that this is in principle true, but this does not explain why *-tus* is preferentially passive, while *-ns* is active, given that they both have similar structures (this problem also arises if we adopt Embick's idea that both are allomorphs of the same syntactic head in different aspectual environments). I have to leave this matter open for now.

Latin has two other non-finite formations that are associated with the verbal paradigm, the future active participle in *-tūrus* (see Leumann 1977: 618f., Sihler 1995: 621, Fortson 2007, Weiss 2009: 443), and the gerundive in *-ndus* (see Leumann 1977: 330f., Sihler 1995: 625ff., Jasanoff 2006, Weiss 2009: 443f., 459f.). The gerundive is also called "future passive participle" or "participle of "necessity" because of its modal force in Classical Latin ("to be VERB-ed").

I have not discussed these formations in Chapter 3 because they are virtually unattested for deponent verbs at the relevant chronological stage (with some important exceptions). The future active suffix *-tūrus* more or less replicates the syntactic problem of the present active suffix *-ns*: it always has active syntax and is made both to deponents and active non-deponent verbs. I give an example of an active future participle with an accusative object from Classical Latin in (38) (the deponent is *persequor* 'persecute, come after').

(38) Caesar, *De Bello Gallico* 5.1.1:

... Caesar obsides imperat ... nisi ita
Caesar.NOM hostages.ACC command.3SG.PRES.ACT unless so
fecerint, sese bello **civitatem**
make.3PL.PERF.SUBJ self.EMPH.ACC war.ABL community.ACC
persecuturum demonstrat
persecute.fut.ptcp.acc.m indicate.3SG.PRES.ACT

"... Caesar demanded hostages ... (He) indicated that he would persecute (their) community with war unless they did this."

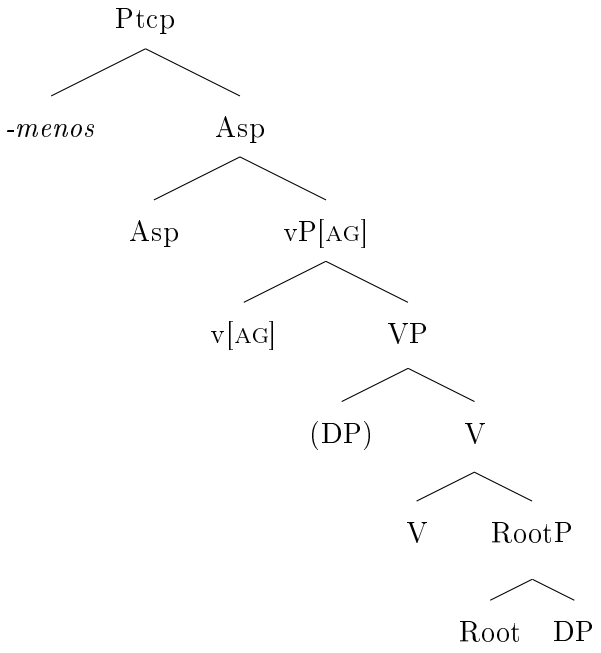
-tūrus is therefore similar in its morphosyntax to both *-tus* and *-ns* and its behavior is in principle predictable from the same mechanism elaborated above (cp. Embick (2000: 218f.)).

The gerundive is more complicated. It originally seems to have been a verbal adjective that was syntactically similar to the present participle in *-ns*, and a number of archaic forms show that it was neither passive nor linked to any kind of modality, e.g., *secundus* 'second', originally 'following' (*sequor* 'follow'), *volvendus* 'rolling' (itr., *volvor* 'roll'), *lābundus* 'slipping' (*lābor* 'slip, glide'), *oriundus* 'rising' (*orior* 'rise'). The prehistory of this suffix proposed by Jasanoff (2006) suggests that it originally included the same functional projections as *-ns*, and that its syntax changed on the way to Classical Latin. I have to leave the details of this change (and the syntactic structure of this formation at its starting and end point) open for now.

Finally, it seems that the Modern Greek deponent participles in *-menos* show unexpected syntactic behavior. In Section 3.6.3, I introduced Alexiadou and Anagnostopoulou (2008)'s proposal that *-menos* can have two underlying structures, one which includes the projection that determines active vs. non-active morphology (v[AG] in my notation) and one which does

not. Both incorporate Asp, and they argue that /*-men-*/ is the exponent of the Asp head, parallel to what Embick (2000) assumes for the Latin suffixes *-ns*/*-tus*. Deponent participles in *-menos* have the same passive reading as *menos*-participles of non-deponent transitive verbs, suggesting a structure without *v*[AG] (Voice in their terminology). However, they can also take agent *by*-phrases and occur with agent-oriented adverbs like *prosektita* 'carefully', which Alexiadou and Anagnostopoulou (2008) interpret as evidence for the presence of Voice in resultant state *menos*-participles. In the notation used here, this would suggest the following structure for a deponent participle like *metahirismenos* 'used':

(39)



However, this structure predicts that the mismatch behavior should be preserved in Greek participles, parallel to Vedic *-(m)āna-*, Ancient Greek *-menos*, and Latin *-tus*, which essentially have the same internal structure. This is another problem that I have to leave unsolved.

To summarize, I have argued in this section that whether or not a voice mismatch is continued in the non-finite forms of a deponent verb depends on whether or not the nominalizing morphology attaches above or below *v*P. If *v*P is included, the mismatch is predicted to be preserved, if *v*P is not included, we expect the resulting nominalization to pattern with that of a non-deponent transitive verb.

(40) Deponent participles generalization (for Greek-type languages):

If a nominalizer in a given language regularly attaches above vP([AG]), deponent behavior is preserved in the nominalization. If a nominalizer attaches below vP([AG]), deponent behavior is suspended in the nominalization.

This generalization needs to be parametrized to take into account that some languages, like Latin, do not have nominalizing morphology that is sensitive to whether or not v[AG] has an external argument (I have called this "underspecified for voice" in Chapter 3). This means that on the surface, it looks like the mismatch is discontinued in, e.g., the Latin *ns*-participle, even though it includes v[AG]. However, the comparison with Vedic and Greek shows that this is a peculiarity of the nominalizing morphology of Latin, rather than a general feature of deponent participles.

The following table summarizes the behavior of the participles of deponent verbs. The leftmost column indicates whether they have active or passive syntax (NB this holds only for the *deponent* participles in these languages, not for the suffixes in general).

Table 47. Morphosyntax of deponent participles in Indo-European

	includes vP	no vP
act.	Gk. *-menos*, Ved. *-(m)ānа-*, Lat. *-ns/ -tus* (*-tūrus*)	
pass.	MG *-menos* (?)	Gk. *-tos*, Ved. *-tá-*, MG *-tos*, Hitt. *-ant-*

This table shows that the generalization (40) on the whole makes the right predictions with respect to the behavior of deponent participles. More research is needed on the status of Modern Greek *-menos* (the question mark in the table above indicates that it is not certain that vP is part of the structure of deponent participles) and the distribution of *-ns* vs. *-tus* in Latin.

5.5 Summary

In this chapter I have argued that the narrow definition of deponency together with the analysis of deponents proposed in Section 4.3 and the "post-syntactic" approach to voice morphology in general makes can explain a number of puzzles concerning the distribution of voice morphology in the older Indo-European languages. I have proposed that it can account for apparent "voice co-occurrence" problems in Vedic and Greek, as well as for *activa tantum*. It also provides a straightforward account for the lack of deponents in languages like English, which do not have morphology that is sensitive to different values of v[AG].

Finally, the proposal that deponency is triggered by the interaction of a verbalizing head with v correctly predicts whether or not mismatch behavior is preserved in non-finite formations of deponents.

This chapter concludes the synchronic discussion of Indo-European deponents. In the next chapter, I discuss the consequences of my proposal for the reconstruction of the voice system of Proto-Indo-European and the question of whether or not we can reconstruct voice mismatches for the proto-language.

Chapter 6

Reconstructing Proto-Indo-European deponents

In the previous chapters, I have discussed Indo-European deponents from a strictly synchronic perspective, and I have proposed an analysis of of when deponency can occur. This chapter has two goals: to show that Proto-Indo-European (PIE), too, had non-canonical middles, and to show how some of the PIE canonical middles developed into non-canonical middles in the daughter branches. This contributes to the ongoing debate about the function(s) of the PIE middle voice. I propose that PIE (and pre-PIE) had a bivalent voice system and that the PIE non-active voice occurred in essentially the same environments as in other languages with this type of voice system. While this in itself is not earthshaking, it does mean that we do not need to make special assumptions for stative *media tantum*, since these are a stable feature of active—non-active voice systems. Moreover, and maybe more controversially, we now expect that formally middle verbs can be transitive, and that some of these transitive middle verbs are agentive and hence non-canonical middles. Before discussing the candidates for this, I briefly review the literature on the PIE middle.

6.1 The Proto-Indo-European middle

The literature on the reconstruction of the PIE middle is divided both on the formal and the semantic side. Concerning the formal side, I follow Jasanoff (2003)'s reconstruction of the "proto-middle" or *h_2e-conjugation set of endings (followed by Weiss 2009 and Fortson 2010) over more traditional reconstructions such as the ones found in standard textbooks like that of Tichy (2001) or Meier-Brügger (2010). While the *h_2e-conjugation ultimately gave rise to a number of different sets of inflectional endings in the IE daughter branches, the focus of this study is on the middle endings that resulted from it. The following table summarizes the PIE middle endings for the singular and plural (based on Jasanoff 2003: 55).

Table 48. PIE middle endings

	primary	secondary
1sg.	*-h_2e-r	*-h_2e
2sg.	*-th_2e-r	*-th_2e
3sg.	*-o-r; *-to-r	*-o; *-to
1pl.	*-med^hh_2(-r?)	*-med^hh_2
2pl.	*-$d^h(u)\underset{\frown}{u}e$(-$r$?)	*-$d^h(u)\underset{\frown}{u}e$
3pl.	*-ro(-r?); *-nto-r	*-ro; *-nto

There are three main novelties that set this reconstruction apart from older reconstructions of the PIE middle: 1) the reconstruction of the 1sg. *-h_2e(-r), 2sg. *-th_2e(-r) based on the evidence of Hittite, Tocharian, and Italo-Celtic; the traditional Graeco-Aryan based reconstructions *-$ma\underset{\frown}{i}$, *-$so\underset{\frown}{i}$ are fairly straightforward innovations of the "inner Indo-European" branches[1] based on the active endings, 2) the reconstruction of the 3sg. and 3pl. forms, which originally were "dentalless" *-o and *-ro, besides which we find the renewed variants *-to

[1] I use "inner Indo-European" to refer to the group of languages that share this innovation, that is, the replacement of *-r by *-i as the marker of the primary middle endings ("core IE" is also used). In general, I assume a model in which Hittite, Tocharian, and Italo-Celtic split off from the proto-language (and in that order) before the dispersal of the 'inner IE" branches began.

and *-*nto* already in (late?) PIE (again based on an obvious analogy with the corresponding active endings, cp. also Watkins 1969), and 3) the primary/secondary distinction is expressed through the "hic-et-nunc" marker *-*r* in the middle, as opposed to *-*i* in the active, meaning that the post-Italo-Celtic branches of Indo-European again innovated in switching from *-*r* to *-*i* in the middle.

1) and 3) are not directly relevant to the question of deponents in PIE and have already been motivated at length by Jasanoff (2003, see also Jasanoff 1977, 1978, 1979, 1998, 1994). However, the reconstruction of the 3sg. and 3pl. middle endings is linked to the question of the canonical functions of the Proto-Indo-European middle, and deserves a more detailed discussion.

On the meaning side, there is some debate concerning the original functions of the Proto-Indo-European middle (see, e.g., Gonda 1960, Benveniste 1966: 168ff., Hollifield 1977: 5ff., Rix 1988, Benedetti 2006, Meiser 2009). In particular, there is almost no discussion of the oppositional functions of non-active voice that are such a stable feature of languages with the same type of voice system as PIE—a bivalent active/non-active system.

The reason for this is presumably that these functions remained productive in the IE daughter languages and were therefore susceptible to morphological remodeling and lexical replacement, making it difficult to find exact cognates for, e.g., reflexives that are not also explicable in terms of the productive mechanisms of that particular daughter language. This is the same problem that is encountered with other verbal categories that remained or became productive in a given language, like the *áya*-causatives in Vedic or full-grade thematic presents in Greek and Indo-Iranian. As a result, the discussion usually centers on formations that are clear archaisms within the synchronic language state, and which do have recognizable cognates in other branches. These are usually *media tantum*, and they tend to have synchronically irregular morphology (*qua* archaisms). Examples of such frequently discussed middles are given in (1) (see Villanueva Svensson 2012 for more middle presents).

(1) a. *$\hat{k}e\underset{\frown}{i}$ 'lie': Ved. *śáye, śére*, YAv. *sōire*, Gk. *keîmai*, Hitt. *kitta(ri)*, CLuv. *zīyar(i)*, etc.

b. *h_1es 'sit down'[2]: Ved. *ā́ste*, YAv. 3pl. *åŋhāire*, Gk. *hêmai*, Hitt. *eša(ri)* < *$h_1\bar{e}s$-*(t)or*.[3]

c. *$d^he\underset{\frown}{u}g^h$ 'be/make useful': Ved. *duhé* 'gives milk', 3pl. *duh-ré*, Goth. *daug*, Gk. *étukhon* 'happen to be at, chanced upon', *teúkhō* 'prepare'.

d. *mag^h 'be able to, enable, achieve': Ved. *á́ mahe*[4] < *mag^h-$o\underset{\frown}{i}$*, Gk. *mákhomai* 'fight' (+ dat.), Goth. *mag* 'be able to', OCS *mogǫ*.

e. *$ste\underset{\frown}{u}$ 'praise'[5]: Ved. *stavé* 'is praised' (besides thematic *stávate*, later also "renewed" athematic *stuté*), *stávāna-*, YAv. *staota*, 1sg. *-stuiiē*, Gk. *steũtai*, Hitt. *ištuwāri*, etc.

But basing one's reconstruction of the distribution of PIE middle morphology on such forms alone is likely to lead to a skewed picture of that distribution. Forms like the ones in (1) in particular have led to the reconstruction of a separate morphological category "stative" in PIE by Rix (1988) and Oettinger (1976b), (1992), Kümmel (1996), Gotō (1997), among others, and this category has become canonized by LIV^2 as "Wurzelstativ". However, the functional status of this category and its delimitation from the category "middle" remain unclear. The literature just cited suggests (sometimes implicitly) that this was a third voice category besides active and middle, but a trivalent system active—middle—stative has no obvious typological parallels. Moreover, most of the predicates on which this category is based

[2]LIV^2: 232 : *h_1eh_1s 'sit (down), occupy sth.',

[3]Cp. Villanueva Svensson (2012: 335 and fn. 7) and Melchert (To appear); both argue against a reduplicated present *h_1e-h_1s-*(t)or* since *h_1e-h_1s-* should have given Hittite *ēšš-* (Kimball 1999: 144), cp. the fientive/inchoative suffix *-ēšš-* < *-eh_1-s-* (Watkins 1971, Melchert 1994: 78, Jasanoff 2004, differently Kloekhorst 2008: 255f.).

[4]The active optative *mahema* is attested twice in the Rigveda.

[5]This root may have been alternating, Villanueva Svensson (2012: 336) classifies the full grade middle forms as oppositional.

are inherently stative, and not in any obvious sense by virtue of the morphology they take. I briefly mentioned in Section 2.3 that stative predicates in general tend to take non-active morphology in bivalent voice systems and that this should be considered one of the canonical syntactic contexts which license non-active morphology (cp. the Modern Greek examples cited by Zombolou and Alexiadou 2014, e.g., *kime* 'lie', *ime* 'be', *dikeume* 'have the right', *tsigunevome* 'be stingy', *ironevome* 'be ironic', etc.). In other words, the roots listed as root statives in LIV[2] can easily be accommodated by the theory of the canonical function of non-active morphology laid out in Chapter 2. These are the following[6] (6 out of 17 are classified as "uncertain" root statives by LIV, indicated here by a question mark before the root):

[6]I am glossing over the difference between R(z) and R(e) here since no discernible functional difference (at least for the "stative theory") is attached to it.

Table 49. Root statives in LIV[2]

Root	Meaning	"Stative"	Meaning
?*$d^heu̯g^h$	'be/make useful'	Ved. *duhé*	'gives milk'
?*$\hat{k}leu̯$	'hear'	OAv. *sruiiē*	'is famous'
?*$mei̯H$-	'bloom, grow'	Hitt. *miyari*	'is born'
*$tu̯ek$	'be visible'	Hitt. *dukkāri*	'is visible'
*$u̯erH$	'be hot'	Hitt. *urāni*	'is burning'
*$g/\hat{g}ei̯s$	'turn'	Hitt. *kīša(ri)*	'becomes, happens'
2. *$h_1ai̯$	'be(come) warm, hot'	Hitt. *aāri*[7]	'becomes warm'
?*h_2eh_1	'be hot'	Pal. *ḫāri*	'is hot'
*h_1eh_1s[8]	'sit down'	Ved. *ā́ste*, Hitt. *eša(ri)*, etc.	'sits down'
*h_2ep	'fit'	Old Hitt. 3sg.ipv. *ḫapparu*	'let it fit'
1. *$\hat{k}ei̯$	'lie'	Hitt. *kitta(ri)*, Ved. *śáye*, etc.	'is lying'
?*$\hat{k}eu̯b^h$	'appear beautiful'	Ved. *śóbhe*[9]	'looks beautiful' (?)
?*$leu̯b^h$	'be pleasant, please'	Osc. *loufir*[10]	'or'
*mag^h	'be able'	Ved. *ā́ mahe*	'procures'
*$steu̯$	'be famous; praise'	Hitt. *ištuwāri*, Ved. *stáve*	'becomes known, is praised'
*$tei̯h_1$	'become hot'	Hitt. *zēari*	'is cooking, is cooked'
1. *$u̯es$	'wear clothes'	Ved. *váste*, Gk. *heîmai*, etc.	'wears, is dressed'

Even under a very narrow definition of what "state" means (excluding, for example, 'hear',

[7]Reflecting /*a'ari*/ < **ayari* with a synchronic hiatus, cp. Melchert (1994: 28), LIV[2]: 229.

[8]See footnote 2.

[9]Hapax in an unclear passage (RV 1.120.5), the interpretation as a verbal form is contested, see Gotō 1987: 309 (with literature), Kümmel 1996: 113f., LIV[2]: 330.

[10]From **léu̯b^he+r* 'pleases' according to LIV[2]: 414, cp. Buck (1904: 14, 150, 177), Weiss (2009: 312 'if one wants'), who, however, also points out that the restoration of the final -*r* is doubtful (p. 388, fn. 43), and De Vaan (2008: 338f.) posits a preform **loub^h*-*ē*/*ī*-*r*.

'bloom', and 'become hot'), 13 out of these 17 verbs are inherently stative predicates, and not stative by virtue of their inflectional endings. That "stativity", however defined, was not inherently linked to the dentalless third person endings *-*o*, pl. *-*ro* is also suggested by the fact that the reflexes of these undoubtedly archaic endings surface in a variety of different contexts in the daughter languages, quite apart from the examples in (1). In Indo-Iranian and Old Irish, for example, they are used as oppositional (often eventive) passives.

In Old Irish, they form the passive of old thematic verbs (see Watkins 1969: 181ff., Cowgill 1983, Jasanoff (2003: 50ff.) on the prehistory of the Old Irish passive and "deponent" inflection):

Table 50. Old Irish dentalless passives

Active	Meaning	Passive	Meaning
beirid	'carries'	*ber(a)ir*	'is (being) carried'
benaid	'strikes'	*benair*	'is (being) struck'
canaid	'sing'	*can(a)ir*	'is (being) sung'
melid	'grinds'	*melair*	'is (being) ground'
fedid	'leads'	*fedir*	'is (being) led'

In Vedic, on the other hand, dentalless "stative" forms occasionally make oppositional passives to *athematic* verbs, usually to alternating verbs that also have a 3sg. middle with the renewed ending *-te/-ta* < *-*to(-i)* (see Kümmel 1996 for more examples):

Table 51. Vedic dentalless passives

Active		Middle		Passive	
gṛnā́ti	'praises	*gṛṇīté*	'praises'[11]	*gṛṇé*	'is (being) praised'
śṛṇóti	'hears'	*śṛṇuté*	'hears'	*śṛṇvé*	'is (being) heard, is famed as'
brávīti	'speaks'	*brūté*	'speaks'	*bruvé*	'is (being) spoken'
sunóti	'presses'			*sunvé*	'is (being) pressed'
hinóti	'impels'	3pl. *hinváte*	'hurry'	*hinvé*[12]	'is (being) driven'

Contrary to the *yá*-passive, these dentalless passives/"statives" are usually generic and do not occur with agents in the instrumental (cp. Kümmel 1996: 34). This could be interpreted as argument in favor of the "stative" hypothesis, but may just as well be the result of a diachronic development from older middles, since these tend to have generic/dispositional readings cross-linguistically (see Section 2.2.3).

In Hittite, on the other hand, the "stative" dentalless 3sg. ending is found with a number of transitive deponents with a decidedly non-stative meaning: *arka(ri)* 'mounts', *ḫanna(ri)* 'contests at law, sues', *ḫatta(ri)* 'slits; sacrifices', *ḫuett(i)a(ri)* 'plucks, pulls', *iškalla(ri)* 'tears, slits', *paḫša(ri)* 'protects', etc. Oettinger (1992: 354) mentions these cases briefly and suggests that they are *einzelsprachlich* developments, but that does not explain their synchronically unproductive and evidently archaic inflection. Not all of these verbs have a good etymology, but *arka(ri)*, *ḫanna(ri)* and *paḫša(ri)* have cognates, and if LIV^2 feels confident enough to set up a "stative" for the root **t̰u̯ek* based on the evidence of Hittite *dukkāri* alone, then not doing so for *iškalla(ri)*/**skelH* and *ḫatta(ri)*/?2. **h₂et* (see the respective entries in LIV^2) because of their "aberrant" syntactic behavior seems inconsistent.

It has to be stressed that the "stative" hypothesis rests largely on the opposition between the dentalless 3sg. **-o* and the 3sg. mid. **-to* (and the 3pl. **-ra* in Indo-Iranian), since the

[11] Also 'is praised', e.g., RV 5.41.10.

[12] But note that only 2 of the 8 instances of the 3pl. *hinviré* are passive, the others are reflexive or self-benefactive, see Kümmel (1996: 142f.)

other endings of the "stative" paradigm are identical to those of the middle. As Gotō (1997: 191) points out, it is not clear that this is enough evidence for setting up a separate verbal category, since the usual mechanism of morphological renewal can adequately capture the replacement of *-*o* by *-*to*.

As for the "meaning" of the middle, the discussion likewise places too much emphasis on *media tantum*, especially archaic forms like those in (3). For instance, Rix (1988: 104) cites the following three functions as being original to the PIE middle: "A) The deponent function or the middle tantum, B) the reflexive function, and C) the passive function."

However, it is not clear what the deponent/middle tantum "function" would be since this category by any definition encompasses a variety of different verb classes.[13] We have seen that passives and reflexives are indeed contexts in which middle morphology is cross-linguistically encountered, but Rix cites *śrayate* 'lean' (itr., glossed as "rises himself") as an example of the reflexive function B), presumably because it has oppositional active forms, and then claims that the reflexive function is not "capable of accounting for a deponent verb as ... Greek ὄρτο 'arose' ..." (p. 105). But if *śrayate* can be glossed as "rises himself", then there is no principled reason why the same should not be possible for ὄρτο /ôrto/. Of course, ὄρτο /ôrto/ is a *medium tantum* whereas *śrayate* is an alternating verb, but neither of them is reflexive.

As for the deponent category, Oettinger (1992) claims that transitive deponents cannot be inherited, since they do not express the original function of the middle ("Betroffenheit des Verhaltensträgers", affectedness of the agent/actor). He subsumes some cases which must be inherited, like *$sek^{u}etoi$, under "reflexives", but it is not clear why *$sek^{u}etoi$, Ved. *lábhate* 'seizes' or Gk. *mémphetai* 'scolds' should be reflexive (p. 353), whereas Lat. *populatur* 'devastates, ravages' and Hitt. *ḫattari* 'slits' are not (ibid.). Oettinger goes on to suggest that even the latter group of verbs may originally have been reflexive, and that this component of their meaning was lost in the individual branches.

To summarize, agentive verbs with middle morphology (deponents) are generally consid-

[13] And "function" is clearly a misnomer for deponents and *media tantum*.

ered innovations of the individual languages, to be explained by the loss of some aspect of the original, canonical meaning of the middle verb in question. While such a canonical meaning is recoverable in some cases, I have argued at length in the previous chapters that "mismatch verbs" are a general feature of active—non-active (and active—middle—passive) voice systems and are found at every diachronic stage of languages that have such a system (as the data from Modern Greek show). That is, these voice systems provide a synchronic "space" for deponents: verbs which do not have a canonical middle/non-active function that is recoverable by language learners. Given that PIE by all accounts had a bivalent synthetic voice system (grounds for rejecting a third category "stative" have just been given), the unmarked assumption should be that we will encounter traces of PIE mismatch verbs in the daughter languages, and that we can attempt the reconstruction of PIE deponents based on these. This will be undertaken in the next section.

6.2 Proto-Indo-European deponents

In the following, I discuss the PIE roots that seem to have displayed deponent behavior based on the evidence of the daughter languages. The Hittite, Vedic, Avestan, and Latin deponents discussed in this section also have entries in the Appendix where their synchronic behavior is discussed. There are several criteria for positing deponent status of a given verbal stem (or root) in PIE:

- **Synchronic deponent status in at least two separate branches**, according to the definition of deponency given in Section 2.4 and the diagnostics discussed in Section 4.2. "Two separate branches" means non-adjacent language families without shared innovations, that is, a deponent attested in Greek and Vedic, for example, is less securely reconstructible for PIE than one attested in, e.g., Hittite and Vedic.

- **No synchronic motivation for non-active morphology**: If there is some synchronic motivation for non-active morphology on an agentive verb in one branch, like analogy with a semantically or morphonologically similar verb, its claim to PIE deponent status

is weakened, unless there is corroborating evidence from other branches in which there is no synchronic motivation for non-active morphology. In other words, the non-active morphology on such verbs must be "non-trivial" from a synchronic point of view. To give an example (pointed out to me by Jeremy Rau), the non-active morphology of the Greek denominative transitive deponent *aitiáomai* 'accuse, censure, hold responsible' (*aítios* 'responsible') is most likely due to analogy with the semantically similar deponent *mémphomai* 'blame, censure'. While the inner-Greek origin of *aitiáomai* is beyond any doubt, other cases may be less clear, so we need to exclude the possibly of "innovative" non-oppositional canonical middles. This mostly concerns non-oppositional verb classes like stative and experiencer verbs which show a great deal of cross-linguistic variation with respect to canonical voice morphology (cp. the discussion in Section 2.3.2), so voice morphology that is canonical for a given subclass of verbs in one language may be non-canonical in another. This is especially relevant for verbs of speech and certain verbs of visual perception, which vary greatly across the individual branches.

- **Morphological correspondence**: If cognate deponents in different branches correspond in their derivational morphology, they are more likely inherited than if they have differing verbal morphology. The same caveats with respect to adjacent branches as above apply.

- **Syntactic correspondence**: Identical object case and inherited agent nouns or verbal adjectives with the same syntactic behavior may provide additional evidence for deponent status (if one or more of the above criteria already apply).

It is clear that these criteria will lead to a very conservative estimate of the number of deponents we can reconstruct, and most of the time not all of them will be in evidence for a given formation. However, this list can serve as a starting point for classifying verbs into secure and less secure mismatch cases.

6.2.1 *deh_2-i̯- 'divide, distribute'

While the root *$deh_2(i?)$ 'divide' itself was not a deponent (cp. the Vedic aorist forms *dīṣva* (YV) vs. *áva adāt* (MS), *ava-dyáti* (YV)), it made an ablauting *h_2e-conjugation *i*-present 3sg. *$déh_2$-i̯-e*, 3pl. *dh_2-i̯-énti* (Jasanoff 2003: 105ff.) which surfaces as a deponent in Vedic *dáyate* 'distributes' and Greek *daíomai* 'distribute'. LIV^2: 103f. reconstructs an *$éi̯e/o$-present *dh_2-$éi̯e/o$-* to account for the Vedic and Greek forms; the lack of aspiration on the dental is explained as analogical to the full grade aorist forms. However, Jasanoff (2003: 101) argues that the Vedic zero grade "iterative-causatives" of the type *iṣáya-* 'impel', *rucáya-* 'shine', *turáya-* 'press forward' are better explained as *ya*-extended presents of zero grade thematic *tudáti*-presents (or thematic aorists) with which they are synchronically associated. These have a very different averbo from that of *i*-presents like *dháyati* 'sucks', *kṣáyati* 'rules over', and *hváyati* 'calls', and it is this class that *dáyate* synchronically belongs to. The root shape /*day*/ is, of course, unexpected both in Vedic and in Greek. Jasanoff 2003: 102ff. argues that the lack of compensatory lengthening in *i*-presents to laryngeal-final roots is due to a Proto-Indo-European sound law called the "AHIHA-rule": *-*AHIHA*- > *-*AIHA*- (*A* = any vowel, *I* = i̯ or u̯) which would result in a short vowel before the glide in the 1sg. of the paradigm of these verbs (e.g., *$déh_2$-i-h_2e > *dé-i̯-h_2e), with subsequent analogical extension of the new root shape to contexts where compensatory lengthening would regularly take place, like the 3sg. *deh_2-i̯-e*. This rule also operated in the instrumental singular of *ā*-stems (*-ayā* instead of *-*eyā*) and would explain the attested root shape /*day*/ in Vedic.

In Greek, the glide should have been lost in the present stem and must have been restored, presumably precisely because it was felt to be part of the root very early on. Other derivatives from this neo-root in which the glide was preserved before a consonant certainly played a role, too (e.g., *daís*, *-tós* 'feast', the future *daísō*, cp. Jasanoff 2003: 105).

On the meaning side, both the Vedic and the Greek forms are agentive, and there is no trace of an older canonical function (although Greek has a a few instances of passive use that must be innovative, see the entry in Appendix D). There is no synchronic reason why a verb meaning 'distribute' should be middle in either language, and the continuants of other

*i-presents in Vedic are formally active (*dháyati* 'sucks', *kṣáyati* 'rules over', *hváyati* 'calls', *vyáyati* 'envelops'). On the other hand, the fact that the reflexes of other *h_2e-conjugation *i-presents are formally active in Hittite, Vedic, and Greek makes it seem somewhat strange that *$déh_2$-i-h_2e alone is continued as a formally middle verb in the latter two languages. To be on the safe side, we should therefore operate with a late PIE/pre-Graeco-Aryan deponent.

6.2.2 *$h_1\underset{\frown}{u}eg^{\underset{\smile}{u}h}$ 'speak solemnly, praise'

This root made an athematic reduplicated middle present (*h_1e-$h_1\underset{\frown}{u}og^{\underset{\smile}{u}h}$-/)$h_1e$-$h_1ug^{\underset{\smile}{u}h}$- (LIV^2: 253, Villanueva Svensson 2012: 335), which is reflected in the Vedic athematic present 3pl. *óhate*, *óhāna*-,[14] the Old Avestan 1sg. *aojōi*, 3sg.ipf. *aogədā*, ptcp. *aojāna*-, and the Greek 3sg.ipf. *eũkto* (*Thebaiïs* 3.3). This was remodelled as a thematic present *eúkhomai* very early on (cp. Myc. *eu-ke-to* /eukhetoi/). While a root athematic present *$h_1e\underset{\frown}{u}g^{\underset{\smile}{u}h}$-*to* with full grade I would also give the Greek and Indo-Iranian forms, the reconstruction of the root shape *$h_1\underset{\frown}{u}eg^{\underset{\smile}{u}h}$ seems necessary because of the Latin present *voveō* 'vow' (reflecting an *$\acute{\underset{\frown}{e}}i\underset{\frown}{e}/o$-iterative *$h_1\underset{\frown}{u}og^{\underset{\smile}{u}h}$-$\acute{\underset{\frown}{e}}i\underset{\frown}{e}/o$-) and may find further confirmation in Ved. *vāghat*- 'praiser' (< *$h_1\underset{\frown}{u}o/\bar{e}g^{\underset{\smile}{u}h}$-$\underset{\smile}{n}t$-?), which could belong to the same root (EWA II: 539).[15]

The Greek and Vedic forms suggest that a deponent *h_1e-$h_1ug^{\underset{\smile}{u}h}$-$to(r/\underset{\frown}{i})$ was already part of the proto-language. The non-active inflection is moreover non-trivial from a synchronic point of view. The active inflection of the Latin iterative-causative, on the other hand, is completely expected in this stem type.

6.2.3 *peh_2-s 'protect'

The root *peh_2 is not exclusively deponent; Indo-Iranian has an active root present in Vedic *pā́ti*, OAv. *pā̰t* 'protects' and an active subjunctive *pāsati*. The latter is generally identified

[14] Also *ohānā́*-.

[15] I am grateful to Jay Jasanoff for bringing this form to my attention. Further evidence for a full grade II root may come from Armenian, which has a defective aorist stem *$gog(e)$- (e.g., 2sg.ipv. *gog* 'speak!') that could go back to *$\underset{\frown}{u}og^{\underset{\smile}{u}h}$. See Klingenschmitt (1982: 275) for a discussion of this stem.

as *s*-aorist subjunctive, e .g., LIV^2: 460 and Narten (1964: 168f.), who also argues that it is a recent, metrically conditioned formation. However, there are other *s*-stem forms of this root that point to an *s*-present or desiderative **peh₂-s-(e/o-)* which surfaces with non-active morphology more often than not in the daughter branches. The clearest case is Hittite *paḫš-* 'protect', which is classified as active *mi*-verb by LIV^2: 460, but active forms are practically non-existent until the Neo-Hittite period. Kloekhorst (2008: 612) moreover points out that *paḫš-* takes on the active *ḫi-* rather than the *mi*-inflection when it is finally transformed into an active verb (the form *paḫḫašmi* cited by LIV^2 is actually attested only once, whereas *paḫḫašḫi* is much more frequent). The fact that *paḫš* takes the dentalless 3sg. middle ending only confirms its status as an archaism. The same *s*-present is presumably what underlies the OCS present *pasǫ* 'graze, herd' and the Tocharian A class II present 3sg. *pāṣtär*, 3pl. *pāsantär* 'protect' (Jasanoff 1988: 230f., fn. 10, 2003: 136, 182f., 2012a). The Tocharian A deponent inflection makes it tempting to compare this verb directly to Hittite *paḫša(ri)*, but the corresponding Tocharian B present *pāṣtär*, 3pl. *paskentär* suggests that both rather go back to an **sk̂e/o*-present that became a neo-root in Tocharian (thus Hackstein 1995: 178, Malzahn 2010: 699). Hackstein rightly points out that assuming an **s*-present for Tocharian A and a **sk̂e/o*-present for Tocharian B is uneconomical, but the connection between the PIE **s*- and **sk̂e/o*-forms is not completely straightforward. Thus, Latin *pāscō* 'graze' has an unexpected full grade which LIV^2 loc.cit. explains as analogical to that of the "*s*-aorist" **pḗh₂-s-/péh₂-s-*. However, the evidence for this *s*-aorist is based only on Vedic *pāsati*, which is a young formation, and the Latin perfect *pāuī*, which according to Meiser (2003: 124f.) could represent the inner-Italic replacement of an older *s*-aorist. This is indirect evidence at best, and without the Vedic subjunctive form, it seems easier to assume that the full grade in *pāscō* is due to the *s*-present (for which independent evidence exists at least in Hittite and OCS) which was remodelled as Italic **ske/o*-present on the way to Latin. Meiser (2003: 124) points out that forms like the Latin PPP *pāstus* and the agent noun *pāstor* are evidence for the existence of an *s*-present/desiderative beside the **ske/o*-formation in Latin (thus also Jasanoff 1988: 230f., fn. 10, but see Hackstein 1995: 177 for objections). We could therefore

reconstruct a deponent *s*-present **péh₂-s-or*[16] for Proto-Indo-European that gave the Hittite forms more or less directly, but was remade as **sḱe/o*-present in (at least) Tocharian B and Latin, where *-sc-* was a synchronically less marked present stem forming suffix than *-s-*. In Latin, this remodelling was accompanied by the loss of the deponent inflection, which was preserved in Tocharian.

A wrinkle in this picture is the "*si*-imperative" *paḫši*, which Jasanoff (2012a) (also Jasanoff 1988: 230f., fn. 10 and Jasanoff 2003: 182f.) traces back to the 2sg. *s*-present subjunctive **peh₂-se-si*, haplologized to **peh₂-si* (see Oettinger 2007 for a different view). It is unclear why a formally active 2sg.subj. form would be chosen to supplete the imperative paradigm of a formally middle deponent.[17] However, this pattern is more generally found with dentalless deponents in Hittite, e.g., *ḫannari* 'sues; judges' : ipv. *ḫanni*, *ḫuittiyari* 'pulls' : ipv. *ḫuetti*, *iškallari* 'tears off' : ipv. *iškalli*, etc., (see Oettinger 2007), and presumably needs an inner-Anatolian explanation. Nevertheless, the prehistory of the relationship between formally active *paḫši* and the deponent paradigm of **peh₂-s-* is not completely clear.

While the stem **peh₂-s-(e/o)-* may have been a desiderative at some point, the daughter languages preserve no traces of desiderative meaning, and the neo-root is decidedly agentive in all branches. Moreover, there is no synchronic motivation for non-active morphology on verbs meaning 'protect' in these languages (cp. Ved. *pā́ti*, *rákṣati*, OAv. *pā̰t*, Gk. *phulássō*, Lat. *custōdiō*, *conservō*, Hitt. *paḫšnuzzi*, etc.). It is therefore unproblematic to assume that this stem was a deponent already in Proto-Indo-European.

---

[16] Or **pḗh₂-s-/péh₂-s-or*, depending on how serious we want to take the lengthened grade in Latin. In that case, Hittite would have generalized the weak stem.

[17] As Jay Jasanoff has pointed out to me, it may be relevant here that Vedic has a few more cases in which a formally active subjunctive is paired with a formally middle indicative of the same stem. This is regular for *s*-aorist subjunctives, which are usually formally active and do not alternate (only ≈ 20 middle forms are found in the RV, Macdonell 1910: 379), while the corresponding indicatives take both the active and the middle endings. This means that verbs that take middle endings in the *s*-aorist indicative (as expected for *media tantum*, for example) will end up with a formally active *s*-aorist subjunctive. Examples include aor. *astoṣṭa* 'praised' : subj. *stoṣat*, aor. *ayaṁsta* 'directed, drove' : subj. *yáṁsat*, aor.3pl. *neṣata* 'led' : subj. *néṣat*, etc.

6.2.4 *h_2neh_3 'scorn, reprimand'

The deponent inflection of this root is guaranteed by the correspondence between Greek *ónomai* 'scorn, reprimand' (2sg. *ónosai*, inner-Greek aorist *ōnosámēn*), Hitt. *ḫannari* 'contest at law, sue; judge',[18] and the *k*-extended Tocharian root *nǎk* seen in the class I subjunctive B (inf) *nāktsi* (replaced by a class VII subjunctive in Tocharian A), pret. III *nǎksate*, and the new class VIII present B *nǎkṣtär*, A *nākäṣtär* 'blames, reprimands' (Hackstein 1995: 65ff., Malzahn 2010: 677f.).

The Greek present could reflect either *$h_2n̥h_3$-*(t)or* or a full grade I variant *$h_2énh_3$-*(t)or* more or less directly. Both *$h_2n̥h_3$-*C*- and *h_2enh_3-*c* would have given **ano-C*- with subsequent assimilation to **ono-C*- (thus Hackstein 1995: 66, who also dismisses Hom. *ónato* as evidence for final *h_2; see also Pinault (1982: 20ff.) who connects the Greek and Old Irish forms with the root of *h_1neh_3-$mn̥$ 'name'), preceded by the by now familiar replacement of the 3sg.mid. **-o* by **-to*. The Hittite form is more problematic. A full grade II middle is impossible. While a full grade I middle *$h_2énh_3$-*or* should have given **HanH-V*- > *ḫann-V*- (cp. *ḫarra*- 'crush' < *$h_2érh_3$-*V*-, Melchert 1994: 79f., Kloekhorst 2008: 300f.; on the loss of *h_3 in other positions see Melchert 1994: 72ff.), *h_3 was apparently also preserved in medial position in some cases, the circumstances of which are not clear, cp. Hitt. *walḫ*- < *$u(e)lh_3$-, Kloekhorst 2008: 945f.; Hitt. *lāḫu*- 'pour' < *$lóh_3$-u*-, Melchert 2011. If *$(C)Rh_3V$ gave **(C)aRr̥V*, as Kloekhorst, loc.cit. suggests, a zero grade middle *$h_2n̥h_3$-*ór*, on the other hand, should presumably have surfaced as **ḫanḫāri*, and even if gemination took place, the resultant verb should behave like *dukkāri* 'is visible' (reflecting accent on the ending). Since full grade seems to be the more expected ablaut grade of old *media tantum* and the medial reflexes of *h_3 are contested either way, it therefore seems more prudent to operate with a full grade I middle *$h_2énh_3$-*(t)or* for Greek and Hittite.

Old Irish and Tocharian, on the other hand, seem to require a full grade II form. Tocharian inherited a root shape *$nă$- < *h_2neh_3 which it extended with an element *-k*- (Hackstein 1995:

[18] Hackstein (1995: 67) also adduces Lycian *qãti*, *qãnti* (cp. HED: III, 82), but see Kloekhorst (2008: 284) for objections.

66f.); this stem also exhibits deponent inflection. Old Irish *-antar* 'is blemished' (Watkins 1962: 116ff., Pinault (1982) loc.cit., LIV^2 loc.cit.), is explained by which LIV^2 as a blend of the full grade reflex **nā* with the zero grade reflex **ana* (Watkins operates only with the zero grade). Synchroncially, it behaves like the passive of an unattested **anaid* < **anati* 'blemishes' (cp. the nominal forms OIr. *on*; *anim*, both 'blemish'), but the clear deponent status of this root in Greek, Hittite, and Tocharian suggests that this use is an innovation of Old Irish.

While the transitive syntax and agentive semantics of this stem are relatively clear in three out of for branches and the non-active morphology is synchronically non-trivial (but cp. *mémphomai* 'blame' in Greek), the root shape is not. While full grade I is usually assumed to arise from full grade II as its *Schwebeablaut* variant (that is, as a new full grade based on its zero grade), it seems that in this case the full grade I present would be quite old. Since at this point we expect *media tantum* to have full grade, and since zero grade would be problematic for Hittite anyway, this nevertheless seems to be the less problematic reconstruction.

6.2.5 **med* 'measure (out), discern'

The deponent behavior of this root is amply attested in Indo-European: Greek has *mḗdomai* 'devise, contrive' (aor. *emḗsato*) and *médomai* 'take care of'. The Hesychian gloss μῆστο · βουλεύσατο (*mêsto · bouleúsato*) could reflect a present injunctive **mēd-to*, in which case the thematic present would go back to an athematic Narten present, as reconstructed by LIV^2: 423. Greek *mêsto* is moreover cognate with the Old Irish "long-vowel preterite" *·mídair* 'judged', confirming that this root made a Narten imperfect (Jasanoff 2012c).[19]

There are no reflexes in Vedic, but Avestan has three forms that belong to this root according to Hintze (2000): the Old Avestan 3sg. aorist subjunctive *masatā* 'shall measure

[19] See Schumacher 2004: 74ff. for the more traditional account of the Old Irish preterite, which takes it to be a replacement of an older (at least Proto-Celtic) reduplicated perfect. A general critique of the "reduplication" theory of long-vowel verbal formations can be found in Jasanoff (2012c); note that there is no evidence for an old perfect formation to this root.

out',[20] and the Young Avestan 3pl. present injunctive *vī-māδaiiaṇta* (V.7.38, V.7.40) and 3pl. present subjunctive *vī-māδaiiåṇte*. Latin has a present *medeor* 'help, heal'[21] that could reflect **med-eh$_1$-i̯e/o-* (see Jasanoff 1978 and 2004 on the prehistory of PIE verbs in **-eh$_1$-i̯e/o-*) or **med-ei̯e/o-*. The latter, however, is unlikely because of the unexpected *e*-grade of the root. LIV^2 loc.cit. tentatively sets up an "essive" **m$_e$d-h$_1$i̯é-* (see Harðarson 1998 on this category and Jasanoff 2004 for counterarguments), but concedes that the (likewise unexpected) full grade of the root is probably connected to the full grade presents found in Greek, Old Irish and Gothic. Gothic *mitan* 'measure' (OE *metan*, OHG *mez(z)an*, etc., cp. Feist 1939: 363f.) reflects thematic **med-e/o-*. This stem also underlies the Old Irish deponent present *midithir* 'judge', which was remodelled to **med-i̯e/o-* within Celtic (Schumacher 2004: 481; Kortlandt 2007: 137 on the other hand assumes an athematic *i*-present). While the Avestan causative present and the Latin **ē*-stem are most likely creations of those branches, the full-grade thematic presents of Greek, Celtic, and Germanic could reflect the remodelled athematic Narten-ablauting present.

More evidence for a verbal Narten fomation may come from Baltic. Villanueva Svensson (2006) argues that the Old Lithuanian athematic present *pamĕmi* (< **pa-mĕdmi*), inf. *pamĕdėti* (also *(pa)mĕdyti*) 'imitate, ape' and the corresponding Latvian form *mẽdît* 'imitate' go back to Proto-Baltic **mēd-mai* 'measure' and provide further evidence for an old athematic Narten present **mēd-*/*med-*. He notes that the lengthened grade in the Baltic forms could also be due to Winter's Law, but the Greek forms independently require a lengthened grade form **mēd*.

To summarize, we find reflexes pointing to a present stem with R($\bar{e}$) in Greek, Baltic and Old Irish, and reflexes of full grade in Greek, Old Irish, and Germanic. That the formation underlying these presents was athematic is suggested by Baltic and Greek. Deponent inflection is found in Greek, Avestan, Old Irish, and Latin. Based on this evidence, Villanueva Svensson

[20] This form could also be read as disyllabic *mas^{a}tā*, in which case it would be a 2sg. *s*-aorist injunctive reflecting **matsta* < **mad-s-ta*, but Hintze 2000: 170f. rejects this solution in favor of a trisyllabic reading.

[21] Not attested in Old Latin and therefore not included in the Appendix.

(2006) reconstructs an athematic middle present **méd-or*, 3pl. *méd-ror*. This would provide a straightforward point of departure for the forms of the daughter branches, taking into account the usual language-specific innovations and remodelling (thematization, replacement of **-o* by **-to*, levelling of ablaut differences, etc.). The Narten ablaut in a middle-only paradigm (where we would not expect ablaut at all) is unusual, to put it mildly, but seems to be required by Greek and Old Irish and supported by the Baltic evidence. I therefore follow Villanueva Svensson's reconstruction of a Proto-Indo-European deponent for the root **med*. The formally active participles *médōn*, *médeōn* 'ruler, ruling' (Hom.+) do not disturb this picture; they rather seem to be the starting point of an inner-Greek "activization" of this verb, and there is reason to believe that **-(o)nt-* was not originally associated exclusively with formally active verbal paradigms anyway. An old **-(o)nt-* participle to this root would therefore not be a counterargument to reconstructing a non-alternating middle.

To avoid setting up an ablauting middle paradigm, we could assume that the Narten ablaut was actually a feature of this verb's $*h_2e$-conjugation predecessor.[22] $*h_2e$-conjugation verbs originally had R(o/e)-ablaut, but there is no principled reason why Narten root $*h_2e$-verbs should not have had R($\bar{e}$/e)-ablaut. This would be exactly parallel to the alternation between R(o/e) and R($\bar{e}$/e) ablaut in the nominal domain, for example in root nouns (**dóm-*/**dém-* 'house', **g$^{\underline{u}}$óu̯-*/**g$^{\underline{u}}$éu̯-* 'cow', **pód-*/**péd-* 'foot' vs. $*h_3r\acute{e}\hat{g}$-/$*h_3r\acute{e}\hat{g}$-* 'ruler, judge', $*l\acute{e}\hat{g}$-/$*l\acute{e}\hat{g}$-* 'law', see Schindler 1972) and in **i*-stems ($*h_2\acute{o}u̯$-*i*-/$*h_2\acute{e}u̯$-*i*-* 'sheep', $*h_2\acute{o}\hat{k}$-*ri*-/$*h_2\acute{e}\hat{k}$-*ri*-* 'peak, point' vs. *dér-i-*/*dér-i-* 'flaying', etc., see Schindler 1980: 390, Widmer 2004: 50ff.), among other formations.[23]

We can therefore assume that Proto-Indo-European had occasional Narten $*h_2e$-presents of the structure 3sg. R($\acute{e}$)-e, 3pl. R($é$)-$\underset{\circ}{r}$*(s)*, and that the root **med* made such a present in the remote prehistory of Proto-Indo-European. Once the $*h_2e$-verbs split up into either a

[22] I am grateful to Jay Jasanoff for this suggestion.

[23] Note that I am not claiming that R($\bar{e}$/e) ablaut was a functionally distinct ablaut type besides R(o/e) and R(e/Ø) ablaut; presumably it was simply the Narten variant of the latter. For a different view according to which verbal Narten behavior represented a distinct Aktionsart/present stem type in Indo-European see Kümmel (1998) and Melchert (To appear).

new formally active conjugation (the Hittite *ḫi*-conjugation and the thematic conjugations of "inner-IE") or a renewed middle, **med* took the latter route, renewing the 3sg. *-e* as **-o(r)*. While Germanic generalized the weak root grade, Baltic is ambiguous and Greek and Old Irish have reflexes of both the strong and the weak grade, but note that there was an early semantic differentiation between the two root shapes that justifies the retention of both in Greek. Avestan and Latin seem to have independent formations to this root.

This scenario implies that both ablaut variants of the old Narten present were available relatively late, namely up until pre-Greek. While this may seem surprising, since **h₂e*-verbs usually generalize either the strong or the weak stem, there are parallels for the preservation of both ablaut grades in the same language elsewhere in Indo-European (see Jasanoff 2003: 68ff. on Hittite and 2012b on Tocharian).

Concerning the aorist, LIV^2 loc.cit. assumes that the sigmatic aorist seen in Greek *emḗsato* and Old Avestan *masatā* belonged to the proto-language. In that case, **med* would be an exception to the generalization that Indo-European deponents do not have old aorists (which holds for all the other roots discussed in this section). However, it cannot be completely excluded that these stems were independently formed in Greek and Avestan.

While the formal side is thus relatively clear, the semantic side is more complicated. We find the meaning 'measure' in Avestan, Germanic, and Italic (Lat. *modus* 'measure, mode', Osc. *meddíss* 'judge' < 'the one who shows (**deiḱ*) the measure (**med*), the established mode'), 'devise' in Greek, 'heal' in Latin (presumably related to 'take care of' seen in Gk. *médomai*), 'judge' in Old Irish (and cp. Osc. *meddíss*), 'rule' in Greek *médōn*, and 'imitate' in Baltic. LIV^2: 423 essentially follows Benveniste (1969: 123ff.), who argues that the meaning 'measure out (to establish/decide something)' was the original meaning of this root. This is seen most clearly in Avestan and in the Italic nominal derivatives of this root. This then developed into 'measure out, establish (the right measure) for somebody' > 'take care of' in Greek and Latin. For Latin, this actually makes a denominal origin **med-eh₁* (instr.) + **-ie/o* from the instrumental of the root noun underlying Osc. *medíss* the most likely derivation of *medeor* 'help, heal'. This formation should have meant 'have/be with the right measure (for)',

and the fact that *medeor* usually takes the dative (rather than the accusative) confirms this. The development from 'measure out' to 'establish, rule, judge' (Gk. *médōn*, OIr. *midithir*) on the one hand and 'devise' (Gk. *mḗdomai*) on the other is also not too surprising. The only real problem is Baltic 'imitate', but here at least there is a parallel in the development of Skt. *prati-mā-* 'imitate' from *mā* 'measure' (Villanueva Svensson 2006: 97; for the semantic difference between *meh_1* 'measure' and **med* 'measure out, discern' see again Benveniste 1969).

As a final point, it should be noted that there is some variation in the object case of this verb. Greek *médomai* usually takes the genitive, like other verbs that mean 'take care of, think of', and Latin *medeor* is usually found with the dative. However, Greek *mḗdomai*, Avestan *masatā*, and Old Irish *midithir* take accusative objects (*midithir* is also used with the preposition *for* 'on, over'), suggesting that the transitive use of **med* must be old.

6.2.6 *$\underset{\frown}{i}i$-$\underset{\frown}{i}eh_2$- 'demand, seek'

As argued by García Ramón (1993) and (1999b) (see also LIV^2: 310f.), Greek *dízēmai* 'seek' forms a word equation with the stem of Vedic *ī́mahe* 'we are asking, pleading'. He traces both verbs back to a reduplicated middle present *$\underset{\frown}{i}i$-$\underset{\frown}{i}h_2$- and argues that the Vedic middle forms 1sg. *iye*, 1pl. *ī́mahe*, and the middle participle *iyānā́*-[24] go back to this stem more or less directly (with remodelling of the reduplication syllable), while Greek *dízēmai* introduced the full grade of the root (*zā-/zē-* < *$\underset{\frown}{i}eh_2$-), maybe in analogy to the active root present *$\underset{\frown}{i}eh_2$-ti* attested in Vedic *yā́ti* 'asks, requests' (and note that the synchronic **to*-participle Ved. *yātá-*, OAv. *yāta-* and Greek also reflects full grade of the root). Because *ī́mahe* synchronically functions as the middle of act. *yā́ti*, it is not included in the Appendix.

Deponent behavior of this root is also found in the Toch. B subj. II *yāṣtär* 'will ask, beg' < *ih_2-sk̂e/o-*, which reflects a different present stem formation (see Malzahn 2010, also Hackstein 1995: 184ff.; 242 who posits a now obsolete root *$d\underset{\frown}{i}eh_2$).

[24] The accent of the participle is unexpected for a reduplicated present, however.

The Vedic, Greek, and Tocharian deponents of this root are transitive and they all display agentive behavior. García Ramón (1999b) in particular points out the correspondence between Ved. *yātár-* 'avenger' and Gk. *Zētḗr* (Ζητήρ · Ζεὺς ἐν Κύπρῳ /*Zētḗr ·Zeùs èn Kúprōi*/, Hsch.), both reflecting an old agent noun *$\hat{i}$eh$_2$-tér-* 'seeker'. Moreover, at least four Rigvedic passages contain a passive *īyate* that must be interpreted as the passive of the root underlying *ī́mahe* (Kulikov (2012: 494f.), see also Schmid 1956, Insler 1972: 100f.).

While this root did not exclusively take middle morphology (e.g., act. Ved. *yā́ti*, aor.subj. *yāsat* 'shall plead', cp. Narten 1964: 209f.), we have enough evidence to set up a reduplicated deponent present *$\hat{i}$i-$\hat{i}_{ə/i}$h$_2$-to(i)* 'seeks, requests' at least for late inner-Indo-European/pre-Graeco-Aryan. The Tocharian comparandum could suggest that deponent behavior was even older, but because of the non-matching stem forming morphology this is uncertain.

6.3 Possible Proto-Indo-European deponents

6.3.1 *$\hat{u}$er* 'protect; fend off, stop'

Greek has a *u*-present *érŭmai* (also thematized *erúomai*) and a middle perfect *eírūmai*, probably based on the athematic present (and synchronically functioning as present). The lack of a digamma effect has given rise to comparison with Latin *servō* 'save, protect'; this is rejected by Solmsen (1901: 245ff.) who also discusses the digamma problem. LIV^2: 685, n. 4 suggests that the full grade of *érumai* < *$\hat{u}$ér-u-mai* was introduced in analogy to the active or the subjunctive, but the root is solidly deponent in Greek and we have already seen evidence that *media tantum* paradigms tends to have full grade (see Villanueva Svensson 2012). In light of this, the apparent ablaut suggested by the zero grade variant *rhûmai* < *ϝr-ū-mai* (later also thematic *rhúomai*) is more problematic. Beekes (2010: 466), following Frisk and Chantraine (GEW: I, 568f., DELG: II, 376) assumes that there were two ablaut variants *ϝeru- and *ϝrū- in Proto-Greek, but without discussing the relationship between them.

Moreover, the affiliations of this root outside of Greek are completely unclear. LIV^2 loc.cit.

suggests that some of the nominal and verbal forms traditionally grouped with Vedic *vṛ* 'cover' (as in EWA II: 512f. and Lubotsky 1997: II, 1336ff.) actually belong to a separate Vedic root *vṛ* 'protect' < **u̯er* that fell together with the reflexes of **Hu̯er* 'lock in, keep safe' (?Ved. *ā́var* 'opened', Lat. *aperiō* 'open', etc.) and 1. **u̯el* 'lock in, cover up' (Ved. *vṛṇóti* 'locks in', Gk. *eiléō* 'hem in', etc.) because of the formal and semantic overlap of these roots in Indo-Iranian. Because it is difficult to tease apart which verb forms belong to which root, I have not listed this verb as a synchronic deponent in Appendix B. Nevertheless, there are several nominal forms that seem to be built on the same **u*-present that is attested in Greek, e.g., *várūtha-* 'protection', *varūtár-*/*várūtrī-* 'protector' (besides *vartár-* 'defender', cp. EWA II: 512f.) and providing indirect evidence that this present belonged to at least late Proto-Indo-European/pre-Graeco-Aryan. LIV^2 furthermore tentatively suggests that certain verbal formations that are usually grouped with *vṛ* 'cover' might belong to this root, like the aorist subjunctive *várate* 'shall ward off' or even some forms of *vṛṇóti* in the meaning 'wards off, stops', but this is uncertain because of the aforementioned difficulties in telling the two roots apart (cp. Hoffmann 1967: 241, who argues that all forms of *vára-* can be explained as aorist subjunctives of *vṛṇóti*).

Hackstein (2002: 124f.) tries to solve the morphological and phonological problems in Greek by assuming that the underlying root is the same as that of Gk. 3pl. *órontai* 'are watching over, taking care of', YAv. *nī haraitē* 'preserves', etc., for which LIV^2: 534 has a separate entry 1. **ser*, and of Lat. *servō* 'save, protect'. He posits a root **su̯erh₃* (the meaning of which is never defined) and argues that the different root shapes seen in Greek, Latin, Avestan, etc., can be accounted for by the Proto-Indo-European metathesis rule **u̯R̥(H)* > **Ru(H)* (cp. Mayrhofer 1986: 161f.). Besides the full grade **su̯erh₃* and the regular zero grade *su̯r̥h₃*, this would give us a metathesized weak stem variant **sruh₃* which would give Gk. *rhū-* (*rhûmai*) directly. While this solution would solve both the problem of the missing digamma in the anlaut and the */ŭ̯/* in the auslaut (these two properties correlate according to Hackstein 2002: 124f.), it means we have to give up the equation with the Vedic forms, which lack initial *s-* and are moreover *anit* (cp. *vṛtá-*, *vártar-*, etc., EWA II: 512f.). On the other

hand, there is no convincing alternative to the structural analysis of Ved. *varū°* as **var-u-H°* (Klingenschmitt 1982: 233's proposal of */ū/* as due to rhythmic lengthening is completely ad hoc), and the same holds for Greek *rhū°*. That is, there seems to be no way around the laryngeal metathesis proposed by Hackstein, which in turn is potentially incompatible with some of the Vedic forms discussed here. Pending a thorough study of which forms outside of Greek actually belong to the same root, I cannot offer a solution to this problem.

While the formal side of the Greek forms is problematic, it is clear that this verb was synchronically an agentive deponent (cp. the agent noun *rhūtḗr* 'protector'). Non-active inflection on this verb is moreover non-trivial, that is, there is no clear synchronic motivation for it (cp. *alexō* 'ward off, defend', *amű́nō* 'ward off, keep away", *phulássō* 'protect, guard', etc.). To conclude, there is some evidence for a pre-Greek (maybe late Proto-Indo-European) deponent **u*-present **u̯er-u-to* 'protect, defend, fend off', perserved in Greek *modulo* the formal difficulties concerning the root shape and ablaut and maybe indirectly in Vedic nominal forms like *varūtár-* 'protector'. That Vedic also inherited verbal forms of this root is possible, but cannot be conclusively shown. Because of uncertainties concerning the verbal comparanda, very little can be said about the original morphosyntax of this verbal stem, so this must remain a somewhat unhappy case of potential deponency.

6.3.2 **treH*/**trā* 'protect'

LIV^2: 646 tentatively sets up this root for Proto-Indo-European based on the Indo-Iranian evidence alone, and this seems warranted given that the middle inflection of both Vedic *trā́yate* 'protects' and Young Avestan *θrāiieṇte* 'protect' (Yt.13.146, also inf. *θrāiiōidiiai*, Y.34.5, Y.11.9) is not explicable from a synchronic perspective and suggests an inherited archaism.[25]

This root also made an *s*-aorist in Indo-Iranian, attested in the Vedic imperatives *trā́sva*, pl. *trā́dhvam* (= Old Avestan *θrāzdūm*, Y.34.7, Y.58.5) and the subjunctive *trāsate*. These and

[25] If this present stem is indeed attested as a loan word in Uralic as suggested by Katz (2003: 178), this would be additional evidence for its age.

a few other attested forms are discussed by Narten (1964: 131f.), who seems to suggest that the Vedic *s*-aorist was marginal and falling out of use.[26] This verb is transitive and agentive (cp. Ved. *trātár-* 'protector' = Av. *θrātar*, see EWA I: I, 679f. for more nominal forms), and it is safe to assume that at least pre-Proto-Indo-Iranian (/late Proto-Indo-European?) had a deponent **trā-i̯a-ta(i̯)* 'protects'.

6.3.3 **gres*/*gras* 'devour'

Vedic *grásate* 'devours' (perf. mid. opt. *jagrasīta*, ptcp. *jagrasānā́-*, superlative *grásiṣṭha-*, cp. EWA I: 507) shows deponent behavior (the inner-Indic active causative *grāsayati* (Br.) is hardly a counterargument) and has a cognate in the formally active thematic Greek present *gráō* 'eat, gnaw' (Call., also Hsch. γρᾶ · φάγε */grã* · *pháge*/, see GEW: I, 325, DELG: I, 237 for more instances). The middle inflection in Vedic is non-trivial, since other verbs of ingestion are formally active (*átti* 'eats', *aśnā́ti* 'eats', *ághas* 'devoured', *píbati* 'drinks', cp. Buck and Petersen 1945: 327ff.). Since the same is true in Greek (*esthíō* 'eat', *'edō* 'eat', but fut. *édomai*, aor. *éphagon*, *bébrōka* 'have devoured', *pī́nō* 'drink' vs. *patéomai* 'eat, taste', *eréptomai* 'feed on', see Appendix D), we could posit a late Proto-Indo-European/pre-Graeco-Aryan deponent, whose middle inflection was given up in Greek. Given that it is easier to find a synchronic account for the active inflection in Greek than for the middle inflection in Vedic, we can tentatively set up a deponent **gras-e-to*.[27]

Note that LIV^2: 192 sets up an athematic present based on the Cypriotic Greek active imperative *ka-ra-si-ti* */grásthi*/. This form is dated to the 4$^{\text{th}}$ century BCE by Masson (1983: 280) and may not be the strongest evidence for an old athematic paradigm, but if it is old it could mean that this root was not exclusively deponent in PIE and that the mismatch behavior was a relatively late development of pre(-Graeco)-Aryan.

That this root was agentive may receive more evidence if the etymology of *gastḗr* 'stomach'

[26] "Die vereinzelten modalen *s*-Aor.-Formen im RV. können wohl ebensowenig wie die nachṛgvedischen Ind.-Formen (...) ein im eigentlichen lebendiges *s*-Aor.-Paradigma bezeugen.", Narten (1964), loc.cit.

[27] For Greek, **gr̥s-e-* would also be possible (Gotō 1987: 129, fn. 153).

$<$ **gras-tér-* 'devourer' holds (thus, e.g., GEW: 291, but sceptical Beekes (2010: 262), see also the entry of *gras* in the Appendix).

6.3.4 Summary

In the last two sections, I have discussed 6 very likely and 3 possible Proto-Indo-European deponent stems. I have argued that based on their stem-forming morphology, inflection, syntax, and meaning, these should be reconstructed as such already for some stage of the proto-language. This is a deliberately conservative approach—many of the synchronic deponents discussed in the Appendix could be added here, but have been excluded for now because of their lack of unambiguous non-active marked cognates in other languages (e.g., Vedic *bādh* 'attack', *rabh* 'seize', *kṣad* 'serve, arrange'; Hittite *parš(i)-* 'break', *tuḫš-* 'cut off', *iškalla-* 'tear, slit', etc.). As I have argued in the case of **gras*, the middle morphology in such agentive predicates is very often the *lectio difficilior*, since a functionally active deponent was always at risk of being "regularized" by switching to active morphology. In other words, it is likely that more verbs will have to be added to this list in the course of time. Potential cases include:

- The family of Gk. *hīláskomai*, *hílamai* 'appease' and Lat. *sōlor* 'comfort, console', which has been excluded here because of the possible denominal origin of the latter and because of uncertainties concerning the meaning of the root, cp. LIV^2: 530: **selh$_2$-* 'gnädig werden', also Klingenschmitt (1970).

- Gk. *sképtomai* 'watch', Lat. *con-spicor* 'see', etc. (vs. active *speciō*) $<$ **spek̂* (LIV^2: 575f.), excluded here because it is not clear whether active or middle morphology was canonical for PIE verbs of this type (similar to speech act verbs, cp. the discussion in Section 2.3.3) and the Indo-Iranian reflexes of this root are *activa tantum*.

- Lat. *ūtor* 'use', if this is indeed cognate with the Gk. suppletive future of *phérō*, *oísomai* (cp. LIV^2: 297: ?**h$_3$e̯it-* 'mitnehmen').

The deponents discussed here have a very different profile from canonical middles: They are based on present stems rather than aorist stems and (with the exception of **med* and **trā*) lack old aorist formations altogether.

In the next section, I discuss the Proto-Indo-European middle presents that were originally canonical middles, but developed into deponents in one or more of the daughter languages. Again, this is a conservative estimate—some of these verbs pattern as agentive according to one or more of the criteria established in Chapter 4 and could be argued to belong in the deponent category.

6.4 Inner-Indo-European deponents

The Indo-European daughter languages also have a number of synchronic deponents which go back to earlier canonical middles. That is, a diachronic motivation for their middle morphology is easily reconstructible. In this section I discuss middles which are deponents in one branch, but go back to PIE non-deponents.

6.4.1 **h₂e̯isd* 'praise, revere'

The middle-only inflection of this root is assured by the correspondence in non-active morphology between Vedic *íṭṭe* 'implores, beseeches' from athematic *h₂i-h₂e̯isd-*/*h₂i-h₂isd-* or *h₂isd-* (with compensatory lengthening, cp. LIV^2: 261) and Homeric *aídomai* 'be reverent of, fear' from **h₂e̯isd-e/o-* (cp. Peters 1980: 77f.), later replaced by the denominative *aidéomai*, likewise a *medium tantum*. Vedic also has a middle perfect *īḷé* < **h₂i-h₂isd-a̯i*.

Formally active forms are found in Avestan and Gothic: Old Avestan has a stem *išᵃsa-* (Y.50.2 *išᵃsōiṯ*, Y.51.19 *išᵃsą̊s*, Y.31.4 *išᵃsā*) which according to Humbach (1956: 67) goes back to **īžd-ske/o-*. In Gothic, we find the 3pl. present *aistand* 'they are in awe', which may continue the same full grade thematic stem we find in Greek.

While the Vedic forms are undoubtedly agentive (agent noun *īḍitár-*'praiser' (AV), the passive *īḍyate* is attested in Classical Sanskrit), Greek and Gothic point to an experiencer verb meaning 'fear, be afraid of' (with NOM-ACC alignment). We could therefore reconstruct

a full grade *medium tantum* *$h_2e\underset{\frown}{i}sd$-e-to$(\underset{\frown}{i})$* as the immediate preform for Greek. As for Vedic, Peters (loc.cit.) suggests a reduplicated preform *h_2i-h_2isd-o$(\underset{\frown}{i})$* (my notation), with replacement of *-*o* by *-*to*, and compares the formal relationship between the reduplicated present and the full grade thematic present to that of Vedic *ī́jate* 'impels' : *ájati* 'drives'. On the meaning side, it seems easiest to assume that the primary verbal formation made to this root was originally an experiencer verb meaning 'fear, be in awe of' (and therefore a canonical middle-only verb) that developed into a deponent in Vedic.

6.4.2 *h_3ek^u 'behold, catch sight of'

Ved. *ī́kṣate* 'sees, perceives' goes back to a reduplicated desiderative *h_3i-$h_3\overset{u}{\frown}$-se/o-, a desiderative is also attested in the Greek future *ópsomai* < *$h_3(e)k^u$-s-e/o-. While middle morphology on *s*-desideratives and futures may be considered canonical, Homeric Greek also has a present *óssomai* < *$h_3k\overset{u}{\frown}$-$\underset{\frown}{i}$e/o- 'see, foresee' that lacks desiderative semantics. However, the consistent middle morphology may be due to an original meaning 'perceive', and hence an experiencer verb (with NOM-ACC alignment), making the synchronic deponent status uncertain.

Formally active forms are found in Young Avestan *aiβii-āxšaiia-* 'oversee', which may be an *$(e)\underset{\frown}{i}e$/o-extension of the thematic desiderative stem seen in Greek (LIV^2: 297, for a different view see Werba 1999), and in Greek, which has an active perfect *ópōpa*.

6.4.3 *$He\underset{\frown}{i}\hat{k}$ 'appropriate, seize'

The Vedic present *ī́śe* 'owns, has power over', corresponding to Old Avestan *isē* (Y.50.1), *isāna-*, etc., goes back to a result state perfect *Hi-Hi$\hat{k}$- ← *He-Ho$\underset{\frown}{i}\hat{k}$-/He-Hi$\hat{k}$- 'own' < *has appropriated, seized' according to LIV^2: 223, and this is also the preform of the Germanic preterite-present seen in Gothic *aih*, 3pl. *aigun* 'own' < *$\bar{o}i\chi$-/$ai\gamma$- (OE *āh, āgon*, OHG *eigun*, etc., cp. Seebold 1970: 69ff., LIV^2 loc.cit.). The root is also attested in Tocharian B, where it makes a *medium tantum* class II "thematic" present *aiśtär* 'recognizes, knows' (see Malzahn 2010: 543f., for the semantic development cp. the meanings of Engl. *grasp*).

The root meaning 'appropriate, seize' given by LIV^2 seems to rest mainly on the evidence

of Ossetic *īs-/es-* 'take', whose affiliation to this group of forms is doubtful. Without it, a basic meaning 'own' would derive the Indo-Iranian and Germanic meaning from a stative perfect and would also work for Tocharian assuming a semantic shift to possessing knowledge. In that case, the external argument was originally a possessor rather than an agent. Moreover, while the Germanic and Tocharian forms take accusative/oblique objects, in Indo-Iranian the genitive prevails (see the Appendix for the occasional uses with an accusative). Taken together, it seems that the use of middle morphology with this verb can be considered canonical, either because it was inherently stative ('own') or because it was self-benefactive ('has taken for him/herself').

6.4.4 **sek̑^{u}* 'join, accompany, follow'

This verb is one of the most conspicuous candidates for Proto-Indo-European deponent status. We find middle morphology in almost all old Indo-European languages with a morphological voice distinction. The most ubiquitous formation is the thematic middle present **sek̑^{u}-e-to(r)* seen in Ved. *sácate*, OAv. *hacaitē*, Gk. *hépomai*, Lat. *sequor*, OIr. *sechithir*, and also in Lith. *sekù* 'follow' and possibly Goth. *saihvan* 'see' and its Germanic cognates. In Greek, middle morphology is actually found in all tense-aspect stems. The middle thematic aorist *hespómēn* is not necessarily a replacement of an older root aorist (as suggested by LIV^{2}: 525) since the pattern full grade thematic middle : zero grade thematic aorist is well-established in Greek (cp. *dérkomai* : *édrakon* 'see', *trépō* : *étrapon* 'turn', *peúthomai* : *eputhómēn* 'learn, come to know', etc.). The other aorist formation that could be old is the Vedic middle root aorist found in the participle *sacāná-* (only once in the Rigveda besides thematic *sácamāna-* = Av. *hacəmna-*, *hacimna-*) and the optative *sacīmahi* (KS), which may be a younger, inner-Vedic replacement of the Rigvedic *s*-aorist optative (Narten 1964: 262). As for *sacāná-*, Lowe (2012a) has argued that Vedic aorist participles in general do not necessarily imply a "live" aorist paradigm (see also Lowe 2012b on Caland-associated participles in *-āna-* and 2013). Old Avestan, on the other hand, has two active forms in Y.46.1 *həcā* 'I will accompany' and the 3pl.ipv. *scaṇtū* (Y.53.2) 'let them accompany' which LIV^{2} loc.cit. interprets as aorist subjunctive

and imperative, respectively. However, Kellens (1984: 354, 394) remains undecided between present and aorist, and trisyllabic *həcā* is usually interpreted as active present subjunctive (thus Harðarson 1993: 120, fn. 96, but see also Narten 1986: 288, fn. 3). The YAv. 1pl. *haxma* is interpreted as a root aorist injunctive by Cardona (1960: 54). In other words, while there is some evidence for an old root aorist in Indo-Iranian, the material is fairly ambiguous and uncertain.

Indo-Iranian also has several formally active formations to this root which have the same syntactic and semantic behavior as the full grade *medium tantum* (cp. Gotō 1987: 319f.), so these were not oppositional actives and should therefore probably be interpreted as inner-Indo-Iranian innovations. The most conspicuous is the reduplicated present Ved. *síṣakti*, 3pl. *sáścati* ≈ OAv. 1pl. (subj.?) *hišcamaidē* (Y.40.4), YAv. 3sg. *ā.hišhaxti* (V.5.34), but the new Vedic perfect also has active forms (1pl. *saścima*, 3pl. *saścur*) beside the more commonly found 3pl. perfect middle *saściré*.

Finally, Vedic and Avestan have a few active *s*-formations that are variously classified as desideratives or *s*-aorist subjunctives. The Old Avestan 1sg.subj. *haxšāi* (Y.46.10) is classified as an *s*-aorist subjunctive by Kellens (1984: 367), who, however, also points out that several of the passages containing *haxš-* are corrupt and may have to be emended to *hixš-*, a desiderative present. Narten (1964: 262) groups *haxšāi* with the Vedic *s*-aorist subjunctive *sakṣat*, and points out that this was a productive aorist class (type *bhaj-ábhakṣi*), whereas LIV^2 loc.cit. classifies both OAv. *haxšāi* and Ved. *sakṣat* as subjunctives of an old desiderative present **sek^u-s-/sk^u-s-* (cp. Gk. *hépsomai* 'will follow').

To summarize, the Proto-Indo-European averbo of this root was based on the full grade thematic middle present **sék^u-e-to(r)*, which judging by the evidence of Indo-Iranian and Greek also made a desiderative **sek^u-s-* that surfaces as active in Indo-Iranian and as middle in Greek. The active reduplicated present and the perfect are innovations of Indo-Iranian, but the root may have had an old middle root aorist (the reconstruction of which rests entirely on the somewhat uncertain Indo-Iranian evidence).

While there are no objections to reconstructing a deponent present on the formal side, the

meaning and external syntax of the reflexes of **sék^{u}-e/o-* suggest that this was a canonical middle verb in Proto-Indo-European. While the reflexes of this verb take accusative objects in Vedic, Old Irish, and Latin ((2a-c), respectively), they usually take dative objects in Greek (accusative is also found occasionally) and instrumental in Vedic (which is more common than the accusative), cp. (3a-b):

(2) a. Ved., RV 4.7.11c:

vā́tasya meḍíṃ sácate (...)
wind.GEN roar.ACC follow.3SG.PRES.MID

"He follows the roar of the wind"

b. OIr., Ml. 19b11:

ní sechetar immurgu ord oc suidiu
NEG follow.3PL.PRES.NON-ACT however order.ACC at this.DAT

"They do not, however, follow the order in this"

c. Lat.,Plaut., *Aulularia* 4.7.16:

I, iam sequor te, mater
go.IPV at.once follow.1SG.PRES.PASS you.ACC mother

"Go! I (will) follow you at once, mother."

In Vedic, construal of *sac* with the instrumental means 'join with, go together with', and the same construction seems to underlie the use of Greek *hépomai* with the dative.

(3) a. Ved., RV 1.145.2:

'syá krátvā sacate ápradṛpitaḥ
his insight.INSTR follow.3SG.PRES.MID not.careless.NOM

"The one who isn't careless follows/joins in his insight"

b. Gk., Od.9.159:

nêes mén moi héponto duṓdeka
ships.NOM PART me.DAT follow.3PL.IPF.MID twelve

"Twelve ships followed me"

In Indo-Iranian, this construction is often ambiguous between an active, "intransitive-reflexive" reading (Narten 1986: 289) "follow, join (with) somebody" and a passive reading "be accom-

panied by". This ambiguity is often found in the middle participle, e.g.:

(4) a. Ved., RV 5.42.8a-b:

távotíbhiḥ sácamānā áriṣṭāḥ ...
your+help.INSTR.PL accompany.NOM.PL.MID.PTCP unharmed.NOM
suvī́rāḥ
patrons.NOM

'Accompanied by your help ... the patrons remain unharmed'

b. OAv., Y.43.12:

səraošō aš̰ī ... hacimnō
obedience.NOM reward.INSTR follow.PRES.PTCP.MID.NOM.

"Obedience (is) ... accompanied/followed by reward."[28]

Hollifield (1977: 11) suggests that the "intransitive-reflexive" behavior with an instrumental argument points to an old reciprocal middle meaning "accompany each other", and since reciprocals and verbs of motion are well-attested canonical functions of non-active morphology (see Chapter 2), this verb did not originally belong in the deponent category. This is confirmed by the lack of synchronic agentive behavior (no agent nouns, no *yá*-passive in Vedic, etc.).

6.4.5 *$h_1 er\hat{g}^h$ 'climb up, onto'

The reconstruction of an old middle-only present stem rests mainly on Hittite *arkatta*; *arga*, ipv. *argaru* 'mounts sexually' (sheep, etc.) which is formally ambiguous and could reflect *$h_1 érĝ^h$-o(r)* (cp. Melchert 1994: 136f.) or *$h_1 r̥ĝ^h$-ó(r)*;[29] in the latter case the lack of expected **argári* would have to be explained as analogical to the (old full grade) type seen in Hitt. *kitta* 'lies', *kīša* 'becomes' (Craig Melchert, p.c.).

Hitt. *ark-* is almost exclusively transitive (HW: I, 301), the formally active 3sg.pres. *ārki* attested in a Neo-Hittite text (KBo 10.45 iv 30) is probably not old (a variant of the same

[28] See Insler (1975: 65), Narten (1986: 289).

[29] *Pace* Kloekhorst 2008: 203f. (who reconstructs initial *h_3), *$h_1 órĝ^h$-o(r)* is excluded because accented /*ó*/ should have lengthened in both open and closed syllables, see Melchert (1994: 146f.).

text has *arga*).

The Greek iterative *orkhéomai* 'dance' < $*h_1or\hat{g}^h$-*éi̯e/o*- confirms the inflectional pattern of this root, as well as the semantics: Watkins (1975: 18f.) points out that the verb has sexual connotations in Archaic Greek graffiti inscriptions. He also adduces Vedic *ṛghāya*- 'rage, rave' as a further cognate (but see EWA I: 249).

Another potential candidate is Greek *érkhomai* 'come, go', which is usually taken to be a $*s\hat{k}e/o$-present to $*h_1er$ 'reach something, stand' (thus Rix 1970: 98, LIV^2: 238f.). However, the other attested $*s\hat{k}e/o$-presents to this root are formally active (Ved. *ṛcchá́ti* 'reaches', Hitt. *āraskizzi* 'reaches', OP *-ārsatiy* 'comes'). If *érkhomai* does go back to $*h_1er\hat{g}^h$, it provides a parallel of transitive use with Hittite, since it is used with accusative objects designating the path/goal of the action, as in Il.1.322: *érkhesthon klisíēn ... Akhilêos* "go to the hut of Achilles". However, it is difficult to decide whether this verb should be grouped with $*h_1er\hat{g}^h$ or $*h_1er$ (as a compromise, LIV^2 loc.cit. suggests that the reflexes of $*h_1er\hat{g}^h$-*e/o*- and $*h_1r̥$-$s\hat{k}e/o$- may have fallen together in Greek).

To summarize, based on Hittite alone, we can set up an athematic middle present for $*h_1er\hat{g}^h$ which seems to have been a verb of translational motion ("climb onto", with an early development into "mount sexually") and hence a canonical middle, whose likewise middle iterative is found in Greek.

6.4.6 1. *$*u̯es$* 'wear clothes'

The full grade middle present of this root is amply attested: Vedic *váste* 'is wearing', 3pl.ipf. *avasran* (RV 4.2.19), Old Avestan *vastē*, YAv. mid.ptcp. *vaŋhāna*-, Greek *heĩmai* (synchronically used as the perfect of the new present *hénnūmi* 'am putting on (clothes)'), and Hittite *wēšta*, 3pl. *wēššanta* all point to a PIE middle present $*u̯és$-*o(r)*, 3pl. $*u̯és$-*ro(r)* (Ved. *avasra(n)*, remodeled as $*u̯és$-*to*, 3pl. $*u̯és$-*n̥to* (cp. LIV^2: 692f., Villanueva Svensson 2012: 335). According to Malzahn (2010: 896f.) the Tocharian A subjunctive V 1sg.opt. *wsīmār*, 2sg. *wsitār* does not continue the full grade middle present but a zero grade middle aorist $*us$-*to*, based on the evidence of the corresponding subjunctive I in Tocharian B (3sg. *wastär*,

inf. *wastsi*). Given that this root otherwise shows Narten behavior (in Tocharian as well, see Malzahn 2002) and does not have an old aorist formation (the Greek aorist *héssa* 'wore' and the Armenian aorist *z-gec'aw* 'put on',[30] both apparently from *$\underset{\frown}{u}$es-s-, are unlikely to be old), this would have to be a Tocharian innovation. However, Toch. B *wastär* could also continue the old middle present *$\underset{\frown}{u}$és-to(r). The only objection to this explanation would be the lack of root-initial palatalization in Toch. B, but the fact that middle subjunctive I stems never have root-initial palatalization (see Malzahn 2010: 277) makes analogical depalatalization an unproblematic assumption, and this way we do not have to assume an otherwise unparalleled zero grade form of this root (this is also tentatively assumed by LIV^2 (loc.cit) for the Toch. A opt. *wsīmār*).

Since subjunctive I is often synchronically associated with a class III preterit, the preterit III forms Toch. B *wässāte*, A 3pl. *wsānt* cannot be interpreted as evidence for an old *s*-aorist of *$\underset{\frown}{u}$es (*pace* LIV^2), especially since both the subjunctive and the preterit lack root-initial palatalization, making it more likely that the preterit is an inner-Tocharian creation based on the (analogically depalatalized) subjunctive.

On the other hand, the class IX present Toch. B 3pl. *yäskeṃtär* shows synchronically unexpected full grade and initial palatalization. Hackstein (1995: 270) suggests that this is due to an inner-Tocharian remodelling of the inherited full grade middle present as *$\underset{\frown}{u}$es-sk̂e/o-, with retention of the full grade of the older present formation. It is unclear why the irregular initial palatalization would be retained in the present stem, but eliminated in the subjunctive. Nevertheless, it seems easiest to assume that the old full-grade middle present in fact underlies both formations.

The root also made an active causative *$\underset{\frown}{u}$os-é$\underset{\frown}{i}$e/o- attested in Hitt. *waššezzi*, later *waššiya-* (Eichner 1968, Melchert 1984: 164), Ved. *vāsáyati*, Goth. *wasjan*, OE *werian*, etc. (see Feist 1939: 552f.) and Alb. *vesh*, all meaning 'dress (somebody) in'.

The middle present of this verb is transitive in all branches, the direct object is what is

[30] Cp. Klingenschmitt (1982: 286f.)

being worn (cp. Eichner 1968):

(5) RV 4.2.19:

ṛtám avasrann uṣáso vibhātíḥ
truth.ACC wear.3PL.IPF.MID dawn.NOM.PL radiant.NOM.PL

"The radiant dawns clothed themselves in truth"[31]

Greek *heîmai*, synchronically the perfect of the active present *hénnumi*, also takes accusative objects. Its participle likewise has active syntax:

(6) Hom., Od.15.331:

khlaínas eũ heiménoi ēdè khitônas
cloaks.ACC well wearing.MID.PTCP.NOM.PL and tunics.ACC

"wearing cloaks and tunics/well dressed in cloaks and tunics"

Hittite *wēšta* 'wears' can be intransitive or transitive with an accusative object (Kloekhorst 2008: 1004ff.), as in (7).

(7) Hitt., ABoT 4 + I 24f. (Neu 1968a: 193, Eichner 1968: 14):

weššanda=ma išḫharwantuš TÚG-ḪI.A-uš
wear.3PL.PRES.MID=PART blood.red.ACC.PL clothes-PL-ACC.PL
putaliyanteš=a
girded.PRES.PTCP.NOM.PL=and

'They are wearing blood-red clothes and are girded up."

The same construction is found in Tocharian, where *wäs-* takes oblique objects, as in (8) (from Malzahn 2010: 897, see also Hackstein 1995: 264ff.).

(8) wässate kaṣār-wassi
put.on.3SG.PRET.MID Kaṣār-garment.OBL.SG
"He put on the *Kāṣāya*-garment."

[31] Insler (1968).

Despite this correspondence in transitive syntax, I have not added this verb to the deponent category because of its lack of agentive syntax (especially passivization), even in the cases where it means 'put on' rather than 'wear', as in Tocharian. Since *$\underset{\frown}{u}es$ is usually classified as inherently stative, its subject is better characterized as holder/possessor.

6.4.7 3. *$\underset{\frown}{u}es$ 'graze, eat'

This root is attested in Hittite, where it makes a deponent *wešiyattari* 'grazes', which is usually causative-transitive ("X grazes Y"), but can also be intransitive ("Y grazes"). Kloekhorst (2008: 1007f.) suggests that this is actually a denominative of *weši-* c. 'pasture'. However, deponent inflection is also found in Latin *uēscor* 'nourishes oneself (with), enjoys, makes use of' (Pacuv.+ and therefore not included in the Appendix), which goes back to Proto-Italic *$\underset{\frown}{u}$*ēs-sk̂e/o-* (differently LEW: II, 769). The lengthened grade could suggest an old Narten ablauting paradigm (cp. **med* above), and this is what LIV^2: 693f. tentatively sets up based on the additional evidence of nominal forms like Avestan *vāstra-* 'pasture' and *vāstar-* 'herdsman' (cp. also ON *vist* 'nourishment' < *$\underset{\frown}{u}$*es-ti-*), but it is also possible that the lengthened grade in the verbal forms was taken over from the nominal forms and is therefore secondary (thus De Vaan 2008: 669).

Although the Hittite and Latin verbs use different stem-forming suffixes, they agree with respect to their object case. The transitive forms in Hittite take accusative objects (but note that the oldest attestation is intransitive), and so does Latin *uēscor* at the oldest stage, although this is later replaced by the ablative (presumably under the influence of semantically similar verbs like *ūtor* and *fruor*). That this verb was agentive is furthermore confirmed by the close correspondence in agent noun formations between Avestan *vāstar-* and Hittite *wēštara-*, both meaning 'herdsman, shepherd' (the Hittite form presumably reflects a thematization *$\underset{\frown}{u}$*ēs-tr-o-* of the **-ter-/-tr-* stem, cp. Kloekhorst 2008: 1008).

The correspondence in middle inflection and transitive use and the similarity in meaning makes it tempting to set up an old deponent for this root, but there is no morphological common denominator with respect to stem forming morphology, and an inner-Hittite denom-

inative origin of *wešiyattari* cannot be excluded. Moreover, the meaning of the Latin verb suggests that this verb may originally have had a canonical middle meaning (reflexive "nourish oneself" or experiencer "enjoy"). It is surprising that this also took on the corresponding causative meaning in Hittite, but again this development seems to be *einzelsprachlich*.

6.4.8 ?**potḭ̂e/o*- 'be master over, own'

Both Indo-Iranian and Latin have a denominative deponent **pótḭ̂-e/o*- from **póti*- 'lord, master' (Ved. *páti*- 'master', Gk. *pósis* 'master, husband', Lat. *potis* 'able'). In Vedic, this is reflected as *pátyate*; Avestan has *paθiiete* 'becomes master over' (N.105) and the subjunctive *paiθiiāite* in V.18.76, as well as active *paiθiieiti* in V.5.62 which should be restored to *paiθiiāite*, cp. Kellens (1984: 20) (see also EWA II: 72). Latin has a deponent *potior* (3sg. *potitur* and *potītur*) 'become master of, take possession of', but formally active forms are also found already in Plautus (see DELL: 528f., LEW: II, 350f., De Vaan 2008: 484f.). While it would be tempting to reconstruct a Proto-Indo-European denominative deponent, both the Vedic and the Latin form are analyzable as synchronic denominatives to *páti*- and *potis*, respectively. Moreover, the variation in the object case suggests an old stative or inchoative formation with a possessor subject ('be/become master of'). In the Rigveda, *pátya*- takes accusative objects in 16 out of 28 passages (twice with the preverb *abhí*), the instrumental twice, and the locative five times (sometimes with a dative). The Avestan passages all have accusative objects, while Latin varies between accusative, genitive, and ablative (accusative is more common in Old Latin than in Classical Latin, but there does not seem to be any difference in meaning between the different cases (DELL: 528)). Since transitivity alone is not a criterium for deponent status, and since the verb does not otherwise show agentive behavior, I have excluded it from the deponent class.

6.4.9 Summary

The middle verbs discussed in this section can mostly be explained as PIE canonical middles, although some of them occasionally show deponent-like behavior in the individual branches.

So far, we have seen that Proto-Indo-European had present-stem based deponents (Section 6.2) and canonical middles (Section 6.4). Old aorist formations are typically not found in either class (with the possible exceptions of *med and *$sek^{\underset{\frown}{u}}$). I have argued in the previous chapters that Indo-European deponents never reflect old (root) aorists. In the next section, I argue that canonical middles, on the other hand, are often based on an inherited aorist beside which we usually find an equally old present stem. The averbo of an old canonical middle is thus markedly different from that of an old deponent.

6.5 Proto-Indo-European middle aorists

A thorough discussion of all canonical middle aorists that are reconstructible for the proto-language is outside the scope of this thesis, but even a preliminary survey shows that middle aorists differ from middle presents in never surfacing as deponents in the individual branches.

The biggest class of aorist-based *media tantum* belongs to what Jasanoff (2003) calls "stative-intransitive systems". These consist of canonical middles (usually stative, anticausative, and experiencer verbs) which made a PIE *h_2e-conjugation aorist, a stative perfect, and (depending on the branch) a *$\underset{\frown}{i}e/o$-present or an athematic middle present with zero grade of the root ("stative-intransitive" athematic root present, "dentalless middle"). The *h_2e-aorists tend to surface as passive aorists in Vedic and were sometimes replaced by $\bar{e}$-aorists in Greek, but reflexes of middle root aorists are also found in Vedic and Greek. Moreover, a number of the associated formations (notably the perfect and some of the present stems) surface as formally active formations in the individual branches, usually in cases where they enter a transitivity alternation (cp. Hittite *lāki* below).

Not all of these aorists are synchronically non-oppositional, but the oppositional active is usually younger than than the middle and derivationally based on it. The following aorists can be considered representative (this list is based on Jasanoff 2003: ch. 6):

- *$b^he\underset{\frown}{u}d^h$ 'wake up': **aor.**: Ved. *ábodhi*, 3pl. *ábudhran*,*budhánta* 'woke up'; Gk. *eputhómēn* 'I learned', **pres.**: Ved. *bódhati*; *búdhyate* 'wakes up; is awake', YAv. *(-)būiδiia-* 'wake

up'; Gk. *peúthomai* 'learn, perceive'; OCS *bъditъ* 'is awake', **perf.**: Gk. *pépusmai* 'have learned, know', Ved. *bubudhāná-* 'having woken up'.

- *$\hat{g}e\underset{\frown}{u}s$ 'try, taste': **aor.**: Ved. *juṣāṇá-*, 3pl. *juṣanta*, *ajuṣran* 'like, try', **pres.**: Gk. *geúomai* 'taste', **perf.**: Ved. *jujóṣa* 'has tried, likes', Goth. *kaus* 'tested'.

- *leg^h 'lie down': **aor.**: Hitt. *lāki* 'knocks down' (tr.) (synchronically an active present based on a *h_2e-aorist with secondary transitivization, Jasanoff 2003: 149ff.), Gk. *élekto* 'lied down', OCS *-leže* 'lied down', **pres.**: Gk. *lékhetai* 'lies down to sleep' (Hsch.), Toch. B pres. II *lyaśäm* 'lies', OIr. *laigid* 'lies (down)', Goth. *ligan* 'lie' (< *$\underset{\frown}{i}e/o$-), Fal. *lecet* 'lies' ; Hitt. *lagāri* 'bends' (itr.), OCS *-ležitъ* 'lies', both from *l_eg^h-*ór* (Jasanoff 2003: 166, 170, Jasanoff 2004: 160); **perf.**: Gk. *lelokhuîa* 'woman in childbed' (from the perfect participle), Goth. *lag* 'lay'.

- *$le\underset{\frown}{u}k$ 'shine': **aor.**: Hitt. *lukta* 'dawns', Ved *rucānā-* 'shining'[32], Toch. A *lyokät* 'became bright' (< "Presigmatic" aorist with *o*/ø-ablaut *$lo\underset{\frown}{u}k$-to*, root initial palatalization irregular), Jasanoff (2003: 180)), **pres.**: Ved. *rócate* 'shines, is bright', YAv. ptcp. *raociṇt-* 'bright', Toch. B subj. II *lyuśtär* 'lights up' (< *$le\underset{\frown}{u}k$-e-); Toch. B *lyuketär* 'shines' < *luk-ó-tor* ← *luk-ór*), **perf.**: Ved. *ruróca* 'has lit up, is bright'.

- *men 'think': **aor.**: Ved. *ámata* 'thought (of)', OAv. *maṇtā*;[33] Gk. *emánēn* 'became mad' (Greek *ē*-aorists functionally replace old intransitive middle root aorists, Jasanoff (2004: 163)), **pres.**: Ved. *mányate* 'thinks (of), considers' (also *manuté* 'remembers'), OAv. *mainiieṇtē*, Gk. *maínomai* 'rages, become mad', OIr. *-mainethar* 'thinks, believes' (*do-moinethar* 'supposes, believes') (all from *$m\underset{\circ}{n}$-$\underset{\frown}{i}$é/ó-); OCS *mьnitъ* 'thinks', Lith. *mìni* 'remembers', Goth. *munaiþ* 'remembers, commemorates' (all from *$m\underset{\circ}{n}$(n)-ór), **perf.**: Gk. *mémona* 'remember, have in mind', Lat. *meminī* 'remember', Ved. plupf.

[32] No finite aor. forms in Vedic.

[33] *Pace* LIV^2: 435f., the Avestan full grade middle preserves the original ablaut grade.

ámaman 'remembered', YAv. 3sg. *mamne* 'thought', Goth. *ga-man* 'remembers'.[34]

- **mers* 'forget': **aor.**: Ved. RV 3.33.8 *mā́ mr̥ṣ̥thās* 'do not forget!'; 3pl. *mr̥ṣ̥anta*, Toch. B subj. V *mārsaṃ* 'will forget' (< **h₂e*-conjugation aorist **mórs-e*), **pres.**: Ved. *mŕ̥ṣ̥yate* 'forgets'; Toch. B *märsetär* 'forgets' (< **mr̥̊s-ó-tor* ← **mr̥̊ṣ̥-ór*), **perf.**: Ved. *pra-mamárṣa* 'is forgetful, keeps forgetting'.

- **ped* 'fall': **aor.**: Ved. *apadran*, OCS *padǫ* 'they fell', **pres.**: Ved. *pádyate* 'falls', YAv. subj. *paiδiiāite*, **perf.**: Ved. *papāda* 'has fallen down, sunk down', OE *ge-fæt* 'fell'.

- **î̯et* 'take up position': **aor.**: Ved. *yatānā́-* 'positioned, fixed'[35], TB subj. V *yātaṃ* 'will be capable (of)', **pres.**: Ved. *yátate* 'positions oneself', Lat. *nītor* 'leans, supports oneself' (< **ni-î̯et-e/o-*, LIV^2: 314); Toch. B *yototär*, Toch. A *yatatär* 'is able to' (cp. Malzahn (2010: 787)), **perf.**: Ved. *yetire* 'are standing firmly, are fixed', OAv. *yōiθəmā*.

- **nes* 'return': **aor.**: Ved. opt. *sám nasīmahi* 'may we reunite', Gk. pctp. *ásmenos* 'save; glad', **pres.**: Ved. *násate* 'reunites with; returns', Gk. *néomai* 'return home', Goth. *ga-nisan* 'be saved'; Ved. *nínṃsate* 'seek, come to', Gk. *nínsomai* 'return' (?),[36] **perf.**: Goth. *ga-nas* 'was saved'.

- **sperd*^{h} 'run away': **aor.**: Hitt. *išparzasta* 'escaped', Ved. *áspr̥dhran* 'competed', **pres.**: Ved. *spárdhate* 'competes, is in contest with'.

Another very likely candidate is the root **d*^{h}*eû̯g*^{h} 'be/make useful' with the conspicuous zero grade "stative" present **d*^{h}*ug*^{h}*-ó(r)*, 3pl. **d*^{h}*ug*^{h}*-ró(r)* seen in Vedic *duhé* 'milks; gives milk', 3pl. *duh-ré*, *duhaté*[37] (on the use of *duhé* see Gotō 1991, Kümmel 1996: 53ff., Gotō

[34] But not Hitt. *mēmai* 'speaks', which is from **me-moH-i-* ('stammer'), Jasanoff (2003: 118).

[35] No other aorist forms attested.

[36] Toch. A *nas-*, B *nes-* 'be' does not reflect a perfect (*pace* LIV^2: 454), but either a **h₂e*-present with R(*o*/*e*)-ablaut or a Narten-present with analogical depalatalization, thus Jasanoff (2003: 74; 224).

[37] Also Proto-Germanic 3sg. **dugai[þ]* > Old Icelandic *dugir* 'gives help', Jasanoff 1978: 73ff., 2003: 159.

1997: 170ff.) and a perfect (Ved. *dudóha* 'has milked', but more often middle,[38] Goth. *daug* 'is useful'). So far, this root fulfils all the criteria for a "stative-intransitive" system root. However, the only aorist formation attested is the Greek zero grade thematic aorist *étukhon* 'happen to be at, chanced upon'.[39] While root stative-intransitive presents like $*d^hug^h$-*ó(r)* are derivationally related to R(*o/e*)-h_2e-aorists (via internal derivation, Jasanoff 2003: 171, Jasanoff To appear), there is no direct evidence for such an aorist in this particular case.

More examples of old aorist-based *media tantum* paradigms can easily be found, and most of these also have old present formations. They differ in this from the deponents discussed in Section 6.2, which are usually restricted to a particular present stem formation and which rarely have a "live" synchronic aorist paradigm (although Greek was somewhat more enthusiastic in extending deponent behavior from presents to new aorists of the same verb), and practically never an old one.

This conclusion is similar to the one drawn by Meiser (2009), where, however, it is phrased rather differently. Meiser also notes a discrepancy between middle root aorists and presents, but contrary to what I have argued so far, he claims that deponency in PIE was often restricted to an old root aorist:

> "Weit häufiger als "durchgängige Deponentien" finden sich allerdings Paradigmen, bei denen lediglich der Grundstamm – in aller Regel der WA (...) – (mindestens früheinzelsprachlich) ausschließlich medial flektiert, ..."
>
> (Meiser 2009: 319)

However, the table following this quote illustrates that this means that the oppositional active of an old middle root aorist paradigm is often found making only a present, but no aorist stem (while the middle root aorist also has a middle present, as I have argued above),

[38] This perfect could also be an inner-Vedic formation, cp. Kümmel (2000a: 250).

[39] The late PIE thematic present itself may have ultimately originated in root stative-intransitive presents of the type $*\underset{\frown}{u}id$-*ór*, see Jasanoff (To appear).

but since the oppositional active in these cases is usually secondary, this may not be too surprising. Furthermore, Meiser does not distinguish between *media tantum* and deponents, that is, between canonical and non-canonical uses of middle morphology. His approach is descriptive; all attested middle-only verbs are listed and grouped according to the semantic classes established by Kemmer (1993), hence the problem of "mismatches" does not arise. Once this is taken into account, most of Meiser's "deponents" turn out to be canonical middles, so that his generalization concerning aorist middles and my own concerning the connection between aspectual stem type and deponency in (9) are not incompatible.

(9) Proto-Indo-European deponents/non-canonical middles are restricted to roots that make a primary present stem, while Proto-Indo-European canonical middles (alternating and non-alternating) can make either a primary present or a primary aorist.

The deeper reason for this is not clear, so (9) has the status of a mere observation for now. If the connection between deponency and *Aktionsart* discussed in Section 4.4.1 holds, (9) could be due to the fact that *Aktionsart*-stem forming suffixes were associated with the present stem rather than with the aorist stem in Proto-Indo-European (why this should be so is, of course, also not quite clear). In that case, the observation in (9) could be reduced to whatever motivates deponency (or maybe non-active morphology more generally) in the context of particular *Aktionsart* types. As mentioned above, this topic awaits further study.

6.6 Conclusion

I have argued in this chapter that separating *media tantum* from deponents via the definition of the canonical function (or rather, canonical syntactic environments) of middle morphology allows for a more fine-grained distinction between different types of middle paradigms in Proto-Indo-European. In particular, I have shown that it is possible to reconstruct non-canonical middles—deponents—already for the proto-language, which is expected from the perspective of the general typology of active—non-active voice systems.

The crucial difference between canonical and non-canonical middles is that the latter are

never made from aoristic roots (at least at the PIE stage). This is summarized in the following table.

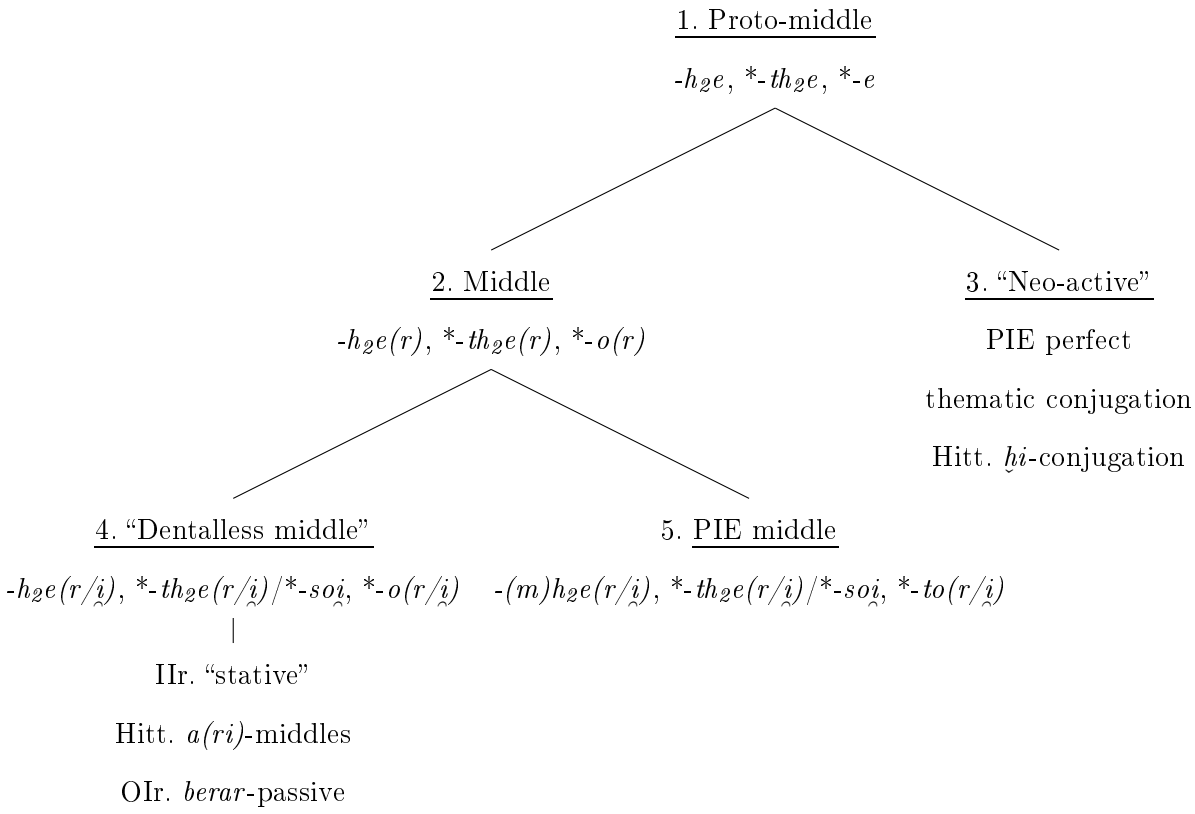
Table 52. PIE *Media tantum* & deponents

	media tantum	*deponents*
ext.arg. = agent	✗	✔
transitive	✔	✔
aorist-based	✔	✗
Examples	$*\hat{k}e\underset{\frown}{i}$, $*mers$, $*men$, etc.	$*deh_2\text{-}\underset{\frown}{i}\text{-}$, $*med$, $*h_2neh_3$, etc.

That deponents are in fact non-canonical middles because they are agentive has been motivated at length in Chapter 2. I have also argued that transitivity alone is not a decisive criterion for distinguishing between canonical and non-canonical middles. The new finding is that this distinction between the two classes translates into a distinction in their averbos: the presence vs. absence of old aorist stems.

Furthermore, we may also construct a fairly detailed relative chronology of deponent (and, generally, *medium tantum*) behavior based on what we know about the different stages of morphological renewal that the middle endings underwent. Pre-Proto-Indo-European had a bivalent voice system with active ($*\text{-}mi$) vs. non-active/middle ($*\text{-}h_2e$) endings. The latter was subject to several waves of morphological renewal and recharacterization on the way to the daughter branches; the most important "split-off points" are summarized in the figure below (based on Jasanoff To appear).

(10) Development of the *h_2e-conjugation/proto-middle



In combination with the methodological criteria discussed in Section 6.2, this gives us an idea of how old the proposed deponents are relative to the morphological renewals of the individual branches.

Of the 6 relatively secure deponents of Section 6.2, 3 belong at least to pre-Graeco-Aryan: *h_1e-h_1ug^{uh}-$to(\underset{\frown}{i})$ 'praises', *$\underset{\frown}{i}i$-$\underset{\frown}{i}_\ominus h_2$-$to(\underset{\frown}{i})$ 'seeks, demands', and *$d\acute{a}\underset{\frown}{i}(h_2)$-$e$-$to\underset{\frown}{i}$ 'distributes'. We may still be able to say more about the internal morphological and semantic prehistory of these forms; the point here is that their deponent status must *at least* belong to this stage.

2 deponents are dentalless middles in Hittite with transitive middle cognates elsewhere in the family (*$p\acute{e}h_2$-s-or 'protects' and *$h_2\underset{\circ}{n}h_3$-$or$ 'scorns'), suggesting that they belong to an older layer of PIE middles.

Finally, we have two cases in which non-active morphology paired with transitive syn-

tax may go all the way back to the proto-middle. The first one is **med* 'measure'; I have argued in Section 6.2.5 that this may ultimately go back to a **h₂e*-present **mḗd-e*/**méd-r̥s* ⇒ **mĕ̆d-(t)o(r/i̯)* ⇒ **mḗd-e-toi̯/r*, **méd-e-toi̯/r*, based partially on the reconstruction by Villanueva Svensson (2006). The second one is **déh₂-i̯-* 'distribute', whose reconstruction as a deponent is based only on Greek and Indo-Iranian, but which can be traced back to a **h₂e*-conjugation *i*-present **déh₂-i̯-e* through internal reconstruction (cp. the discussion in Jasanoff 2003: 103ff.). The problem with these forms is that a proto-middle with active meaning and transitive syntax should have been remade as formally active on the way to the individual branches. That is, it should have become a "neo-active" (node 3 in (10)), mostly likely a thematic active in Greek and Indo-Iranian. It is not clear why **mḗd-e* and **déh₂-i̯-e* escaped this fate, since there were several opportunities for morphological remodeling.

As for the root ablaut grades, no clear generalization emerges. Full grade seems to be the common denominator (we also have two zero-grade reduplicated middles) for all of the forms in Sections 6.2-6.4, not unexpectedly given the observation that root present *media tantum* in general prefer full grade of the root (Watkins 1969: 113), Hollifield 1977: 128, Villanueva Svensson 2003: 145, Villanueva Svensson 2012: 341), but how this relates to the derivational prehistory of these verbs warrants more research.

To conclude, in reconstructing the distribution of the PIE active (**-mi*, **-si*, **-ti*) vs. the (proto-)middle set of endings (**h₂e*, **-th₂e*, **-e*), we need to distinguish between canonical and non-canonical uses of the latter, in addition to distinguishing between oppositional and non-oppositional middles. We also have to take into account the different chronological "split-off" points that led to morphological renewal.

In order to do this, we first need to establish how the Indo-European languages synchronically treat *media tantum* and deponent verbs and what their averbos look like in these languages. While I have attempted to do this for deponents in Indo-Iranian, Greek, Hittite, and Latin, more research on the development of canonical non-oppositional middles is needed. However, I believe that the methodological guidelines outlined in this and the previous chapters will make a useful starting point for such future research.

Chapter 7

Conclusion

The starting point of this thesis was the intuition that verbs like Latin *hortor* 'exhort, command', Vedic *trā́yate* 'protects', and Modern Greek *metahirizome* 'use' have the "wrong" exponents of voice morphology: they use non-active morphology, but appear in syntactically active environments. This kind of "feature mismatch" is found in a variety of different, genetically unrelated languages with the same type of voice system. I have dubbed this "Greek-type" voice system, which exhibits an opposition between active and non-active inflectional voice morphology (or a trivalent system with designated passive morphology). Crucially, non-active morphology in such a system can be characterized as showing "voice syncretism", that is, it is found in a cross-linguistically stable group of syntactic environments. I have discussed these environments in Chapter 2; they encompass both alternating and non-alternating contexts (anticausatives, reflexives, reciprocals, dispositional/generic constructions, passives, statives, experiencer verbs, etc.). I have argued that the intuition that some verbs that take non-active morphology fall outside these canonical contexts is correct, and I have defined the term "deponents" to refer exclusively to these non-canonical middles. This is in line with current research that suggests that the majority of verbs taking non-active/middle morphology in Greek-type languages, including middle-only verbs, are actually canonical middles (Kallulli 2013, Zombolou and Alexiadou 2014). The crucial feature that distinguishes canonical from non-canonical middles (deponents) is the fact that their surface subject is an agent DP. Since

this is actually contested in the literature, part of the empirical contribution of this thesis has been to provide evidence for the agent (rather than experiencer) status of the external argument of deponents (Section 4.2).

The discussion of the morphosyntactic microvariation in deponent behavior constitutes another important empirical contribution. Previous research on deponents (normally defined in the "broad" sense) has usually focused on only one or two languages (very often Latin and/or Greek). I have argued that this has led to some incorrect generalizations, for example, concerning the ability of deponents to passivize and the syntactic behavior of deponents in non-finite environments. I have given a comparative typology of deponents in Vedic Sanskrit, Hittite, Ancient Greek, and Latin in Chapter 3 and compared these non-informant languages to a modern language with the same kind of voice system, Modern Greek.

On the theoretical side, I have argued that the key to understanding deponency is actually the "voice syncretism" exhibited by non-active morphology in Greek-type voice systems. I have followed a line of research that argues that this can be explained if active/non-active morphology spells out the functional head v[AG] in different syntactic environments: v[AG] is spelled out as active if it introduces an external argument and as non-active if it does not. In other words, voice morphology of this type is "post-syntactic" and does not effect alternations in the syntactic component, following Embick (1997), (1998), (2004a) and, similarly, Kallulli (2007) and (2013). While the exact mechanism of this process in canonical environments was not the primary concern of this thesis, I have spent some time elucidating it to show how the same mechanism can be used to derive non-canonical middles. I have argued in Chapter 4 that the agent argument in deponents is introduced in a non-canonical position below v[AG], thus pre-empting the mechanism that would otherwise lead to the spelling out of active morphology. The structural parallel for this are self-benefactives, in which the surface subject is introduced by an applicative head Appl_{BEN} below vP[AG]and then moves to Spec.TP. This structure likewise triggers non-active morphology, even though benefactive predicates are on the surface agentive. I have followed Embick (among others) in assuming that agentivity is a semantic property of the head v[AG], independent of whether or not this head merges a

DP in its specifier, and this is also why merging an agent DP below v[AG] triggers mismatch behavior.

As for the nature of the projection that introduces the agent in deponents, I have argued that it is the verbalizing head V, since deponent behavior is inextricably linked to the "verbal stem" morphology of deponents. I have shown that in Vedic and Greek, deponents are restricted to the imperfective (present) stem, and I have argued that the functional head that is spelled out as verbal stem forming suffix also introduces an agent DP in deponents. I have called this projection V_ι, following Doron (2003) (and passim)'s research on Aktionsart and the intensive template in Hebrew.

The exact nature of V_ι remains an open question. I have argued that it relates to imperfective aspect in Vedic and Greek, and more concretely to a type of Aktionsart that may be similar to Doron's "intensive" template: iterative, intensive, or habitual. Since no such specific semantics are traceable in the deponents that I discuss in Chapter 3, I have called this projection "imperfective", albeit in a very broad sense, and more research on its exact nature is needed.

In Chapter 5, I have discussed the implications of this analysis for the verbal system of the older Indo-European languages. I have shown that the post-syntactic approach to non-active morphology makes the right predictions for the apparent co-occurrence of passive and middle morphology in Vedic and passive and active morphology in Greek. I have furthermore shown that it also predicts the variation with respect to mismatch behavior of the non-finite formations of deponent verbs: nominalizations that include the v[AG]-V-complex continue deponent behavior, while it is suspended in nominalizations that attach directly to the root.

Finally, I have attempted to answer the difficult question of why only "Greek-type" languages have deponents. I have argued that languages like English are not sensitive to whether or not v[AG] has a specifier, and that a lexical entry that would trigger deponent behavior in a language like Greek will always fail to do so in a language like English. I have provided arguments in favor of a lexical entry that specifies the syntactic context for the agent argument, rather than a feature [PASS] or [NONACT] on the root, as in previous approaches. However,

the exact formulation of this entry may have to be refined, and may vary from language to language.

While a large part of this thesis is dedicated to establishing the synchronic morphosyntactic patterns of deponent verbs in Vedic, Greek, Hittite, and Latin and its consequences for the theory of the interaction of voice morphology with the syntactic component, there is also an important diachronic aspect to the question of deponency. This is most immediately clear with respect to the development of individual lexical items that start out as canonical middles and turn into non-canonical middles in the course of time. I have outlined how my analysis of deponency as having "low agents" makes a very straightforward analysis process available by which the surface subjects of canonical transitive middles (in particular those of self-benefactives and experiencer verbs) can become reanalyzed as agents.

The focus of the diachronic parts of this dissertation, however, has been on the general implications of this analysis and general framework for reconstructing PIE deponents. In terms of the reconstruction of the Proto-Indo-European voice system I have argued that we can go beyond tracing the development of individual lexical items from canonical to non-canonical middles and delineate the canonical functions of middle morphology at different stages of its development more generally, and that the reconstruction of deponent behavior can help us establish these canonical functions. I have followed Jasanoff (2003) in assuming an essentially bivalent voice system for (pre-)Proto-Indo-European and its descendants, and I have shown that we can reconstruct mismatch verbs for the successive stages of morphological renewal of the "proto-middle" from pre-PIE to the daughter languages. This finding contributes to the ongoing debate about the function of the PIE middle by approaching the problem from the opposite direction: by establishing that PIE had the type of voice system where morphology occasionally does not "match" syntax, we can gain a better understanding of the environments where it does.

Appendix

A. Hittite

A.I Introduction

Since Hittite transferred most if its transitive middles to the active conjugation between Old Hittite (OH) and Neo-Hittite (NH; see Hoffner and Melchert 2008: 233f.) I concentrate on the synchronic situation in OH and Middle Hittite (MH). I furthermore follow the common practice of distinguishing between texts redacted in Old Script (OS), Middle Script (MS), and New Script (NS).

Hittite deponents can be grouped into two classes, distinguished by the 3sg. middle ending they take. The majority of Hittite deponents takes the dentalless ending *-a(ri)*, which is archaic compared to the synchronically productive 3sg. *-atta(ri)* taken by a smaller group of deponents. The following classification is based on Melchert (2012). I first give the relevant forms of the morphologically middle deponent paradigm and then cite the formally active forms, if there are any. Only forms that are syntactically passive will be listed under "pass.".

A.II Deponents in *-a(ri)*

ark- 'climb, mount sexually' $*h_1 er\hat{g}^h$

Lit.: LIV^2: 238, Neu (1968a: 14) (^{1}*ark-* 'cut' + ^{2}*ark-* 'mount'), HW: I, 301f., HED: I, 142f., HEG: I, 59, Kloekhorst (2008: 203).

Pres. 3sg. *arkatta* (OH/MS), 3sg. *arga* (MH/NS)

Pres.ptcp.	*arkant-* (OS)
Act.	3sg.pres.act. *ārki* (MH/NS)[1]

The participle is only used attributively and has the passive reading typical of Hittite *ant*-participles associated with transitive predicates, e.g.:

KBo 2.12 v 9ff.:

1 UDU šuppištuwaran natta arkántan $^{\text{SAL}}$-išpunnalaš dai
1 sheep consecrated not mounted.PRES.PTCP.ACC FEM-Išpunalla takes

"The *išpunalla*-priestess takes one consecrated, unmounted sheep."

ḫanna- 'contest at law, sue; judge' $*h_2neh_3$

Lit.: LIV^2: 282, Neu (1968a: 39f.), Neu (1968b: 61f.), Watkins (1969: 76), Eichner (1970), HW: II,2, 135ff., HED: III, 77ff., HEG: I, 146f., Kloekhorst (2008: 282ff.)

Pres.	2sg. *ḫannatta(ri)* (OH/MS), 3sg. *ḫannari* (OH/NS)
Pres.ptcp.	*ḫannant-* (MH/NS)
Pret.	3sg. *ḫann(at)at* (OH/MS)
Pass.	3sg.pret.mid. *ḫann(at)at* (3x)
Act.	3sg.pres. *ḫannai* (MS), 2pl.ipv. *ḫanništen* (MH/MS), 2sg.ipv. *ḫanni* (MH/MS)

Three attestations of the preterit middle have a passive reading according to Neu (1968a: 39), e.g.:

[1]Kümmel 2014b: 111 also cites active *arkanzi*, but this forms belongs to *ark-* 'divide', HW: I, 300f., Kloekhorst (2008: 204f.)

KUB 12.63 obv. 33:

ḫanneššа-šet	ḫannat	$\bar{U}L$
judgment-3SG.N.POSS.PRON	judge.3SG.PRET.MID	not

"[J]udgment was not passed on him"[2]

Puhvel, HED: III, 83, suggests that the passive use of *ḫannat* in this passage was taken over from the phrase *ḫanneššar ḫannan* "adjudicated case", in which the present participle has the passive reading expected of a participle of a transitive verb (cp. also Eichner 1970: 15, n. 17). However, the use of the *neuter* possessive pronoun together with the fact that all other verbal attestations of the phrase *ḫanneššar ḫanna-* are active ("bring suit, start a lawsuit", later "pass judgment") means that the passage could equally well be translated as "He$_i$ did not make a case against him$_j$/He$_i$ did not judge his$_j$ case".

The other two passages cited by Neu (1968a: 39) as instances of passive use have the same phrase as KUB 12.63 above (minus the possessive pronoun): *ḫanneššar ḫannadda[t]* (KUB 34.51 5[3]) and *ḫannatat* (78/e rev. 4). As Craig Melchert has pointed out to me, it is noteworthy that the potential "passive" uses of *ḫanna-* occur with *-tta(ri)* rather than *-a(ri)*, and are moreover restricted to the phrase *ḫanneššar ḫanna-*, generally considered to be a calque based on Akkadian. In other words, we could be dealing with a borrowed syntactic construction that was outfitted with the productive "passive" morphology of the target language, namely *-tta(ri)*. This receives confirmation from the fact that there are no instances of passive use of *ḫanna-* in its older meaning 'contest at law, sue'.

[2]Thus HED: III, 79, cp. also Friedrich 1944: 210, Neu 1968a: 39, and Puhvel 1986: 151.

[3]HW: II,2, 137 actually translate this passage as active.

ḫatt(a)- 'slit, sacrifice (by cutting the sacrifical victim's throat)' [$*h_2et$[4]]

Lit.: LIV^2: 274, Neu (1968a: 51ff.), Neu (1968b: 55), HW: III,1, 483ff., HED: III,1, 248ff., HEG: II, 215, Kloekhorst (2008: 330ff.).

Pres.	3sg. *ḫattari* (OS), 3pl. *ḫattanta* (OS)
Pres.ptcp.	*ḫattant-* (OS), [*ḫazziant-* (OS), cp. active stem]
Pret.	*ḫattat* (MH)
Act.	3pl.pres. *ḫattanzi* (MS)

Only middle forms of the stem *ḫatt-*, later *ḫatta-*, are attested from OH on; active forms are securely attested only in MH. Kloekhorst (2008: 331) suggests that the stem *ḫatt(a)-* was originally formally middle, while the corresponding active was made from a different stem *ḫazziya-* (< **ḫatt-ya-* < **ḫe/o-*). However, the attested forms of this verb mean 'strike' rather than 'slit, prick' and are grouped with a separate, alternating verb *ḫazziya-* by Neu 1968a: 53, whom I follow here. The non-active forms of *ḫatta-* are never passive (Neu 1968a: 51). The occasional reflexive use of non-active forms (+ *za*) is attested but cannot be confirmed for OH. This may indicate that the non-active forms were secondarily construed as oppositional once *ḫatt(a)-* started to inflect as active in MH. The following passage exemplifies this (newer) oppositional use of non-active *ḫatta* (OH/NS):

KUB I 14 ii 8ff.:

EGIR=*ŠU*=ma $^{\text{LÚ.MEŠ}}$zilipuriyatallaš uwanzi nu=za 6-*ŠU* walḫanzi
Then=his=but M.PL.Zilipuri-priests come.3PL PART=REFL 6-times hit.3PL
1=aš=za=kan [Š]U=*ZU* ḫatta 1=aš=ma=za=kan [GÌ]R-*ŠU* ḫatta
1=he=REFL=PART hand=his pierces 1=he=but=REFL=PART foot=his pierces

"Then the (two) priests of Zilipuri come. They hit themselves six times. One (of them) pierces his hand, (the other) one pierces his foot."

[4]Only in Anatolian, cp. LIV^2.

ḫuett(i)- 'pluck, pull' [$*h_2\underset{\frown}{u}et^5$]

Lit.: LIV^2: 294, Neu (1968a: 56ff.), Neu (1968b: 60f.), HED: III, 343ff., HEG: I, 272f., Oettinger (2007), Kloekhorst (2008: 349ff.), Jasanoff (2012a).

Pres.	2sg. *ḫuezta* (OH/MS); 3sg. *ḫue/ittiyari* (MS), 3pl. *ḫuetti(y)anta* (OS)
Pres.ptcp.	*ḫuettiant-* (OS)
Pret.	*ḫuittiyati* (OS), *ḫuettiyat*[6] (OH/MS)
Act.	3sg.pres. *ḫuettiazzi* (MH), 3pl. *ḫuettianzi* (OH/MS), ipv. *ḫuetti* (OH/MS), 3pl.pret. *ḫuettier* (MH/MS)

This verb is exclusively transitive in OH, the occasional passive readings are only found in NH and/or NS texts, and crucially only with the productive ending *-tta(ri)* rather than *-a(ri)*.

iškalla- 'tear, slit' $*skelH$

Lit.: LIV^2: 553, Neu (1968a: 76), Neu (1968b: 55), Oettinger (1976b: 126f.), HED: II, 413ff., HEG: 397f., Kloekhorst (2008: 399).

Pres.	3sg. *iškallāri* (OH/NS)
Pres.ptcp.	*iškallant-* (NS)
Pret.	3sg. *iškallatta* (MH/NS)
Act.	3sg.pres. *iškallai* (OH/NS), 3pl. *iškallanzi* (OH/NS), 2sg.ipv. *iškalli* (MH/MS), 1sg.pret. *iškallaḫḫun* (NS)

Since the active and middle forms come from the same chronological layer of texts, it is difficult to decide which ones are older. However, both the active and the middle forms are syntactically active and transitive, which makes it somewhat more likely that this verb

[5]Only in Anatolian, but $*h_2ut\text{-}\underset{\frown}{i}e/o$- should have given *ḫuzziya- rather than attested *ḫuettiya-* (both stems attested from OH on). Melchert (1984: 88, fn. 16) therefore proposes $*h_2\underset{\frown}{u}ed^hh_2$, cp. also Kloekhorst (2008: 352).

[6]Active according to Kloekhorst (2008: 349ff.) and Kümmel (2014b: 144), but see Jasanoff (2012a: fn. 26).

was originally a formally middle deponent that was later remade as a formally active *ḫi*-verb (cp. *ark-*, *ḫanna-*, *paḫš-*). The oldest securely attested form is actually the 2sg.ipv. *iškalli*, but the imperative ending *-i* has been analyzed both as formally middle (Oettinger 2007, cp. also Kümmel 2014b) and as formally active (Jasanoff 2012a, cp. also Kloekhorst 2008). Vine (1999a: 566) argues that this verb belongs to the family of Gk. *skúllō* 'flay', Lith. *skélti* 'split', etc.

paḫš- 'protect' $*peh_2$-s-

Lit.: LIV^2: 460, Neu (1968a: 130ff.), Neu (1968b: 63f.), HED: VIII, 4ff., HEG: II, 361ff., CHD: P, 2ff., Kloekhorst (2008: 611ff.)

Pres.	3sg. *paḫša(ri)* (MH/MS), 3pl. *paḫšanta* (OH/MS), 2pl.ipv. *paḫḫašdumat* (MH/MS),
Pret.	(*paḫḫaštat* (NH))
Act.	1sg.pres. *paḫḫašḫi* (MH/NS), 2sg.ipv. *paḫši* (OH/NS, MH/MS), 2pl. *paḫḫašten* (MH/MS); *paḫšnu-*^{zi} (OS+)

The middle forms are older than the active ones and are syntactically active and transitive (forming an indirect reflexive with *za* was apparently possible later, cf. KUB 36.127 vs. 8), just like the corresponding *nu*-stem. However, *paḫš-* was also inflected as an active at least from MH on, originally as a *ḫi*-verb (cf. Kloekhorst 2008: 612).

parš(i)- 'break'

Lit.: Neu (1968a: 139f.), Neu (1968b: 56f.), HED: VIII, 150ff., HEG: II, 491ff., CHD: P, 180ff., Kloekhorst (2008: 642f.)

Pres.	1sg. *parašḫa* (OS), 3sg. *paršiya* (OS), *paršiyari* (MS), 3pl. *paršanda* (OS), *paršiyand/ta* (OS)
Pres.ptcp.	*paršiyant-* (OS), *paršant-* (MH)

Act.	1pl.pres. *paršuwani* (OS), 3sg. *paršiazzi* (MH/MS), 3pl. *paršiyanzi* (OH/MS), 1sg.pret. *paršiyanun* (MH/MS)

The middle forms of *parš(i)-* are very common in OH; the active forms only catch on in MH. In OH, the middle forms are exclusively active and transitive. The three attestations in which middle forms of *parš(i)-* have an intransitive/anticausative reading ('break, disintegrate') are MH/NS; two occur in the same text.[7]

tuḫš- 'cut off'

Lit.: Neu (1968a: 175ff.), Neu (1968b: 65) (both: *tuḫš-* 'cut' + *tuḫḫuš-* 'end'), HEG: III, 411ff., Kloekhorst (2008: 890f.)

Pres.	3sg. *tuḫša(ri)* (OS)
Pres.ptcp.	*tuḫšant-* (OH/MS)
Pret.	3sg. *tuḫḫuštat* (MH/MS), *tuḫḫuštati* (OH/NS)
Passive	3sg. *tuḫḫuštat* (MH/MS), 1x
Act.	3sg.pres. *tuḫḫušzi* (OH/MS), 3pl. *tuḫšanzi* (OH/MS), 3sg.pret. *tuḫšet* (OH/MS), 1pl.pret. *tuḫšumen* (OH/MS)

I follow Kloekhorst (2008) in synchronically separating *tuḫš-* 'cut' from *tuḫḫuš-* 'end'. To the latter belong the intransitive uses of the 3sg. preterit middle *tuḫḫušta* cited by Neu (1968a: 176).

The middle forms of *tuḫš-* are older than the active ones (which are OH/MS+) and are active and transitive. There is one Middle Hittite instance of apparently passive use of a middle form, the 3sg.pret. *tuḫḫuštat* in KBo 39.8 i 41 (cf. Rost 1953: 350f., Miller 2004: 66), and again we see that the passive reading is associated with a 3sg. in *-tta(ri)* rather than *-a(ri)*. As for the two instances of the 3sg.ipv.mid. *tuḫšaru* in the same text (KBo 39.8 ii

[7] KBo 6.34, see CHD: P, 182 and Oettinger (1976a: 9), who translates the first instances (i 38) as passive.

13, cf. Miller 2004: 71), the fact that the putative subjects are plural make it unlikely that these are indeed passives (*pace* Miller, loc.cit., and Neu 1968a: 176), especially since *hurtauš* 'curses' in line 14 is unambiguously accusative, suggesting an impersonal active construction[8]:

KBo 39.8 ii 13-14:

[tu(ḫ)^{uḫ}(š)]aru apēl UD-aš EME-$^{\underline{HI.A}}$ tuḫ^{uḫ}šaru=wa [(apēl)] UD-a[š
cut.off.3SG.IPV.MID that.GEN day-GEN tongue-PL cut.off.3SG.IPV.MID [(that.GEN)] day-GEN
ḫ]urtauš
curses.ACC.PL

"Let one/him cut off the tongues of that day! Let one/him cut off the curses of that day!"

A further complication is introduced by the fact that there are parallel passages that actually use a periphrastic passive, as in the following case (cited after Miller 2004: 66):

KBo 39.8 i 48-49:

[(nu=wa=šm)]aš=kan tuḫ^{uḫ}šan ēštu tueggaš
PART-QUOT-you.DAT-PART cut.off.PRES.PTCP.NOM.N be.3SG.IPV.MID bodies.GEN
apedaš [(UD-aš E)]ME-$^{\underline{HI.A}}$
those.GEN day-GEN tongue-PL

Miller translates "let the tongues of those days be removed from your persons!", but EME 'tongue' is plural and (usually) commune and should therefore not agree with a neuter singular participle. A possible solution is provided by Rost (1953: 351), who translates "<das> soll von euch abgetrennt sein, <nämlich> die Zungen jener selben Tage." ("let <this> be cut off from you, <namely> the tongues of those days"), in which the participle agrees with a dropped pronominal subject, which is specified by a plural apposition.

To sum up, the dentalless middle forms of *tuḫš-* are syntactically active and transitive, the one certain case of a passive reading is from Middle Hittite and uses *-tta*.

[8] I am grateful to Craig Melchert for pointing this out to me.

Unclear cases

I leave out *karš-* 'cut' (< **kers*), since this verb is attested as an active *mi*-verb already in OH, whereas the corresponding middle forms are on the whole younger. While the late dentalless 3sg.mid. *karša* (NS) is indeed transitive, other middle forms of *karš-* are intransitive ('stop') or passive ('be cut off'), cp. Neu (1968a: 82ff.), HED: IV, 100ff. Although the intransitive/passive forms always take *-tta(ri)* rather than *-a(ri)*, they may be oppositional middles to the formally active stem, rather than to the dentalless deponent (which may be a nonce form). In other words, it is not clear that the middle forms of *karš-* were ever non-oppositional.

A.III Deponents in *-(a)tta(ri)*

šarra- 'transgress, break [an oath]'

Lit.: Neu (1968a: 152ff.), Neu (1968b: 59f.), HEG: II,2, 863ff., CHD: Š,2, 230ff., Kloekhorst (2008: 727ff.).

Pres.	2sg. *šarratta* (MH/MS), 3sg. *šarrattari* (MS), *šarrat[ta]* (OS or MS), 3pl. *šarranta* (MS); 3sg. *šarriet[ta]* (OS or MS, stem *šarriya-*)
Pres.ptcp.	*šarrant-* (MS)
Pret.	1sg. *šarraḫḫat* (OH/MS), 3sg. *šarrattat* (MH/MS)
It.-ipf.	*šarraške/a-* (OH/MS)
Act.	In the meaning 'divide, split up sth.': 3sg.pres. *šārri* (MH/MS), 3pl. *šarranzi* (OS), 3sg.pret. *šāraš* (OS), later also attested as active *mi*-verb.

Active forms of this verb are attested from OH onwards and mean 'divide, split up' (see Kloekhorst 2008: 728f. for arguments that this verb was originally a *ḫi*-verb). The middle forms are either oppositional to the active ('be(come) divided') or active and transitive in the meaning 'break an oath, transgress a border'. These two uses cannot be synchronically derived from each other, and it is likely that the latter one represents the original syntactic behavior of the middle and that the oppositional use was introduced once a corresponding

active paradigm existed.[9] Given how early the active paradigm is attested, the second possibility is that this verb was never a deponent, and that the active transitive use of the middle developed somehow out of its "canonical" oppositional use (although it is difficult to conceive of a semantic development that takes 'divide'/'divide for oneself' to 'transgress, cross over').

wešš- 'wear [clothes]' 1. *$\underset{\frown}{u}es$

Lit.: LIV^2: 692f., Eichner (1968), Neu (1968a: 192ff.), Kloekhorst (2008: 1004ff.)

Pres.	3pl. *wēššanda* (OS), (? *waššanda*, MH/MS), 3sg. *wēšta* (OH/NS)
Pres.ptcp.	*waššant-* (MH/MS)
Act.	active *mi*-verb "clothe (sbdy.)": 3sg.pres. *wašše[zzi]*, (OS); 3sg. *waššiezzi* (MH/MS); 3pl. *waššanzi* (MH/MS), 3sg.pret. *wašta* (MH/NS); 3pl. *wēššanzi* (MH/MS)

The Hittite middle forms go back to a middle root present 3sg. *$\underset{\frown}{u}$és-(t)o(r)*, 3pl. *$\underset{\frown}{u}$és-ro(r)* (cp. Ved. *ávasran*; 3pl. later *$\underset{\frown}{u}$és-$\underset{\circ}{n}$to*) which was active and transitive already in PIE. As Eichner (1968) shows, the root present meant 'wear' + acc.obj., while the *$e\underset{\frown}{i}e/o$-causative from the same root meant 'clothe sbdy.' (act.) and 'put on clothes, dress oneself (in)' (mid.). This distribution is more or less still seen in Hittite, where *wešš-^{tta}* reflects the old middle root present and *wašše-^{zi}* the old causative (Eichner 1968, Melchert 1984: 164), which was later remodeled as *waššiya-*. Both the active and the middle forms of this stem could be used as reflexives (with or without the reflexive particle *za*). Examples of transitive (never reflexive) use of *wešš-* are given by Eichner, loc.cit, and Neu, loc.cit., and need not be repeated here.

wešiya- 'graze (animals)' 3. *$\underset{\frown}{u}es$

Lit.: LIV^2: 693f., Neu (1968a: 200f.), Neu (1968b: 56f.), Oettinger (1979: 528f.), Kloekhorst (2008: 1007f.)

[9] Cf. Neu 1968b: 60: "Ich halte es für sehr wahrscheinlich, dass *šarra-* ursprünglich nur medial flektierte."

Pres.	1sg. *wešiyaḫḫari* (MS), 3sg. *w[e]šiyetta* (OS), *wešiyattari* (MH/MS), 3pl. *wešiyandari* (MH/MS)
Pret.	3sg. *wešiettat* (OH/NS), [? *weš(e)iatta* (OH/NS)]

Both transitive ('X grazes Y') and intransitive use ('Y grazes') are attested for this verb. The oldest attestation is actually intransitive:

KBo 17.23 obv. 4:

-]eni=ma GUD-uš u<e>šietta
-.LOC=but cow-NOM graze.3SG.PRES.MID

" ... but on the [...] a cow is grazing."

Unclear cases

I leave out *parḫ-* 'pursue, chase' (< $*b^herh_2$), which is attested as active *mi*-verb from Old Hittite on (3sg. *paraḫzi* (OS), 2sg. *paraḫši* (MH/MS)), and as an active *ḫi*-verb in one text only, KBo 3.5 (MH/MS, see Kloekhorst 2008: 634, also CHD: P, 143ff. and Kümmel (2014b: 19f.)). The middle is first securely attested in the 3sg. *parḫattari* (MH/MS) and is syntactically active and transitive, with the same range of meanings as the formally active *mi*-verb. The occasional passive/intransitive uses of the middle are found only in NH texts. This case is similar to the one of *iškalla-*: Both the active and the middle forms are transitive. While it is possible that middle forms reflect an old deponent paradigm, the fact that formally active forms are attested from the earliest period on means that this verb technically does not fall under the definition of deponency used here.

The oldest attestation of *šanna-* 'conceal' is as an active *ḫi*-verb (2sg. *šannatti* (MH/MS)). Most attestations, including the middle forms, are NH and/or NS (see Kloekhorst 2008: 719, CHD: Š, 156ff., Kümmel 2014b: 128). Both the active and the middle forms are syntactically active and transitive without any discernible distinction in meaning. This verb may have been a deponent originally, but as in the case of *parḫ-* this is difficult to confirm.

Finally, I also leave out the denominative verb *zaḫ̬ḫiya-* 'fight' (derived from *zaḫ̬ḫai-* c. 'battle', cp. Kloekhorst 2008: 1021f.). This verb takes both active and middle endings, the latter very often have the reciprocal meaning associated with this type of predicate ('fight each other'), so that there is no synchronic mismatch here.

B. Vedic

B.I Introduction

The next section contains a list of Rigvedic deponents, based primarily on Whitney (1885) and Lubotsky (1997). Only forms that are syntactically passive are listed under "pass.", optional prepositions follow the entry of the root in brackets.

B.II Vedic deponents

idh 'ignite, kindle' $*h_2ei\hat{d}^h$

Lit.: Whitney (1885: 8), LIV^2: 259, EWA I: 267, VIA I: 161f., Kümmel (2000a: 125f.), Kulikov (2012: 55ff.).

Pres.	3sg. *indhé*, 3pl. *indháte*, ptcp. *índhāna-*
Aor.	1sg.opt. *idhīmahi*, ptcp. *idhāná-*
Perf.	3sg. *īdhé*, 3pl. *īdhiré*
Pass.	3sg. *idhyáte*, ptcp. *idhyámāna-*
Ger., etc.	*iddhá-* 'kindled'

This root ultimately goes back to the same root as Ved. *edh* 'thrive' (< 'shine, glow'? Thieme 1958 = Thieme 1971: I, 1:160-69), though synchronically they should be kept separate.

Although LIV^2 classifies this root as aoristic, the putative root aorist paradigm is based only on the 1pl.opt. *idhīmahi* and the participle *idhāná-*.[10] As recently argued by Lowe

[10] The putative aorist subjunctive *idhaté* in RV 7.1.8a *á yás te agna idhaté ánīkaṃ* " ... who makes your face glow, O Agni" is a nonce form, to be interpreted as 3sg. despite the completely irregular accent. Oldenberg

(2012b), quite a large number of putative Vedic root aorist participles are not associated with any finite aorist forms. Root aorists should therefore perhaps not be set up based on such participles only. The putative root aorist optative *idhīmahi* (7x) is not as easily dismissed, however. All seven attestation are in cadences of *Gāyatrī*, *Aṇuṣṭubh* or *Jagatī* verses where a heavy initial syllable would be impossible, so there is no doubt that this form is real (and presumably old); while it could theoretically be a replacement of an even older present optative **indhīmahi* (optatives to nasal-infix presents are exceedingly rare in the Rigveda) there is hardly any evidence one way or the other. I therefore follow the literature in (tentatively) classifying this form as root aorist optative.

As for the participle *idhāná-*, Lowe argues that a number of such aorist participles can be interpreted as belonging to a "stative" paradigm, following Kulikov (2006). "Stative" here refers to a type of (synchronically) oppositional passives (*bruvé* 'is called', *śṛṇvé* 'is heard', etc.). Kümmel (2000a: 125, fn. 80) proposes that the passive reading of *indhé* in RV 7.8.1 may actually reflect a "stative" dentalless **indh-é* (older ***idh-é*?), while the active, transitive attestations of *indhé* are usually interpreted as reflecting simplified **ind-dhé* with the regular 3sg. middle ending. The passive readings of the putative aorist participle *idhāná-* could then be explained as belonging to the paradigm of the "stative" present **indh-é* (Kulikov 2006, Lowe 2013).

However, the situation is more complicated. While the designated *ya*-passive stem of *idh* behaves like an agentive passive, with the agent in an adjoined instrumental phrase as in RV 3.26.3 (see Kulikov (2012: 55)), the present *indhé* is never unambiguously used as a passive. It rather seems that all instances of alleged passive use of the present stem *indh-* can also be

---

(1912: 4) rightly rejects interpretation as 3pl. or as a dative singular of an active participle (cp. the parallel passage RV 10.69.3 *yát te mánur yád ánīkaṃ sumitráḥ samīdhé agne* "your face, O Agni, that Manu, having good contracts, has kindled/has made to glow."); Macdonell (1910: 338, fn. 4) interprets it as a present subjunctive with "irregular accent and weak root (...) for **índhate*, beside *inádhate* formed from *idh-* according to the infixing nasal class." Narten (1964: 90f.) likewise takes it to be a subjunctive that was "haplologized" from the phrase *agne inádhate* in the structurally similar RV 4.12.1., with the irregular accent taken over from the regular *bhejiré* in RV 7.1.9. Thieme (1958: 153, fn. 5) = Thieme (1971: I,1:164) suggests an analogy "plur. *bhavanti*: sing. *bhavati*, plur. *vindanti*, sing: *vindati*= plur. *indhate*: X (= *idhate*), that is: it springs from the assumption: plural = singular plus one *n*." All these interpretations contain a certain element of despair, but clearly the form should not be taken as evidence for a root aorist paradigm.

interpreted as anticausatives—that is, they designate a spontaneous, not externally caused event of lighting up. This even holds for Kümmel's "stative" in RV 7.8.1. I give the entire strophe, since the context makes this even clearer (the hymn is addressed to Agni).

RV 7.8.1:

indhé rā́jā sám ar$_i$yó námobhir
light.up.3SG.PRES.MID king.NOM PRVB lord.NOM reverences.INSTR

yasya prátīkam á́hutaṃ ghṛténa
whose face.NOM poured.out.NOM butter.INSTR

náro havyébhir ī́ḍate sabā́dha
men.NOM sacrifices.INSTR invoke.3PL.PRES.MID eagerly

á́gnír ágra uṣásām aśoci
PRVB+Agni.NOM first Uṣas.GEN shine.3SG.PASS

"The king, the lord is lighting up amid acclaim, he whose face is drenched in butter. The men are eagerly invoking (him) with sacrifices. Agni shone forth (even) before the Uṣas."

Note that the subject of intransitive *idh*-clauses like in 7.8.1a is usually Agni/the fire, which is also usually the direct object of the transitive uses of *idh*. While the (medio)passive uses of non-active voice are often difficult to distinguish from the anticausative readings in languages with a voice system like Vedic (cp. Alexiadou and Doron (2012) on this distinction in Hebrew and Modern Greek), an agentive adjunct phrase is only allowed in the passive. The fact that only the stem *idhyá-*, but not the stem *indh-*, allows such a phrase is evidence that only the former is a passive, while the latter can have only an anticausative, but not a passive reading. The same holds for the participles *índhāna-* (8x) and *(sam)idhāná-* (48x). I have not been able to find a case of passive use with an agentive instrumental for either; all passages are compatible with the anticausative reading. While this "double life" of *indhé* (i.e., both a canonical and a non-canonical reading are possible) is still problematic, an account along the lines of Kümmel and Kulikov is still the most likely, namely that we are dealing with a

dentalless "stative" besides a morphologically younger middle. While the former is usually semantically stative or passive, the latter can be transitive, as in the following examples (cp. Kümmel 1996: 10).

(1) "Stative"—middle pairs

gṛṇé	'is/gets praised'	*gṛṇīté*	'praises'[11]
śṛṇvé	'is heard, famed as'	*śṛṇuté*	'hears'
bruvé	'is spoken'	*brūté*	'speaks'
[**indh-é*	'lights up'	**indh-té*	'lights sth. up']

The same original distribution may be assumed for *idh*, where both **indh-é* and **indh-té* fell together as *indhé* in Vedic.

ījˉ (ápa, sám) 'drive, move' (tr.) $*h_2i\text{-}h_2\hat{g}\text{-}$

Lit.: LIV^2: 255f., EWA I: 51, Gotō (1987: 90).

Pres. 3sg.pres. *ījate*, ptcp. *ī́jamāna-*

This neo-root probably continues an old iterative stem of the root $*h_2e\hat{g}$ 'drive' (Gotō 1987: 90). Although some verbs of motion can broadly be understood as falling under the category of canonical middle uses, the middle morphology on *ījˉ* is unexpected given its causative semantics (cp. RV 6.29.5d below) and the consistent use of active morphology on its (diachronic) derivational basis *aj* 'drive' with the same meaning. I have therefore left this verb in the deponent category.

RV 6.29.5d:

yūthévāpsú	sam-ī́jamāna	ūtī́
herds.ACC+like+waters.LOC	together-drive.MID.PTCP.NOM	help.INSTR

[11] Also 'is praised', e.g., RV 5.41.10.

"... like one who,with help, drives the herds together in the water."

īḍ 'invoke, implore, praise' (*prá*, *úpa prá*, *práti*) *h_2i-$h_2e\underset{\frown}{i}sd/h_2isd$-

Lit.: Whitney (1885: 10), LIV^2: 260f., EWA I: 204, Peters (1980: 77f.), VIA I: 452, Kümmel (2000a: 122).

Pres.	1sg. *ī́ḍe*, 3sg. *ī́ṭṭe*, 3pl. *ī́ḍate*, 2sg. *ī́ḍiṣva*, ptcp. *ī́ḍāna-*
Perf.	3sg. *ī́ḍé*
Periphr. perf.	*īkṣā́ṃ cakre* (B.+)
Nom. Ag.	*īḍitár-* (AV)
Ger., etc.	*ī́ḍya-* 'to be praised, praiseworthy'; *īḍén$_i$ya-* 'id.'; *īḍitá-* 'praised, invoked'

A reduplicated present of *h_2eisd* 'revere, be in awe', synchronically treated as a neo-root.

uh 'praise' *$h_1\underset{\frown}{u}eg^{uh}$

Lit.: LIV^2: 253, EWA I: 283, Narten (1968a), VIA I: 164f..

Pres.	3pl. *óhate*, ptcp. *óhāna-* (1x)/*ohāná-* (1x), 2sg.subj. *ohase*, 3sg. *óhate*
Aor.	3sg. *aúhiṣta* (1x)

See Greek ***eúkhomai***.

kṣad 'arrange sth. (for sbdy), serve (a dish)' [*$\hat{k}sed$]

Lit.: Whitney (1885: 27), LIV^2: 338f., EWA I: 422, VIA I: 425f., Kümmel (2000a: 149f.).

Pres.	1pl. *kṣadāmahe* (AV 10.6.5)
Perf.	1sg. *cakṣadé*, ptcp. *cakṣadāná-*
Nom.Ag.	*kṣattár-*

Only in Indo-Iranian.

gu 'call, praise' *$ge\underset{\frown}{u}h_2$*

Lit.: Whitney (1885: 36), LIV^2: 189, EWA I: 478, Schaefer (1994: 114f.), VIA I: 346.

Pres.	Int.: 3sg. *jóguve*, ptcp. *jóguvāna-*

gras 'devour' **gres*

Lit.: Whitney (1885: 40), LIV^2: 192, EWA I: 507, Gotō (1987: 129), VIA I: 346f., Kümmel (2000a: 166).

Pres.	3du.ipv. *grásetām*
Perf.	Opt.3sg. *jagrasīta*, ptcp. *jagrasānā́-*
Pass.	Perf.ptcp. *jagrasānā́-* (1x)
Nom.Ag.	[*grasitṛtama-* (Nir. VI 8), *grastar-* (Cl.)]
Ger., etc.	*grasitá-*

The finite forms of *gras* are active and transitive, but it is surprising that one of the two Rigvedic attestations of the perfect middle participle has a passive reading. This is unusual for deponents, whose middle participles usually have the same behavior with respect to voice and valency as their active forms. However, the use with an instrumental agent in RV 4.17.1d (= 10.111.9a) makes this the only possible interpretation of *jagrasānā́-*:

RV 4.17.1d

sṛjáḥ síndūm̐r áhinā jagrasānā́n
release.2SG streams.ACC snake.INSTR devour.PERF.MID.PTCP.ACC.PL

"You release the streams (which have been) devoured by the snake."

The second attestation of *jagrasānā́-* in RV 10.94.6 behaves as expected, however.
The apparent *seṭ*-character seen in formations like the verbal adjective *grasitá-* (later *grastá-*) must be secondary (cp. Gotō 1987: 129, fn. 151).

The late superlative *grasitṛtama-* could be indirect evidence for an agent noun to this root

(*grasitar-* + superlative suffix *-tama-*), see Tichy 1995: 75ff. Tichy, however, also points out that *-tama-* takes both adjectival and substantival derivational bases, and there is no way of telling which one we are dealing with in the case of the putative **grasitar-*. The simplex *grastar-* 'eclipser' (designation of a astronomical constellation), if it indeed belongs here, is not attested until Classical Sanskrit.

taṁs 'push, shake, pull' **tens*

Lit.: Whitney (1885: 59), LIV^2: 629, EWA I: 609f., Jamison 1983: 93f., Schaefer (1994: 125ff.), VIA I: 188, Kümmel (2000a: 204f.).

Pres.	*áya*-pres.: 2du. *taṁsayethe*, inf. *paritaṁsayádhyai*; int.: 3du.subj. *vitantasaíte*
Perf.	3pl. *tatasré*
Act.	Caus.aor. 2du. *nirátataṁsatam* (1x); ipf. 3sg. *átaṁsayat* (VS); aor. *átasat* (AV)

Although Jamison (1983: 94) argues that the active VS form *átaṁsayat* should be taken as evidence of an originally active causative paradigm, all the Rigvedic forms are formally middle, with the exception of the cryptic past form *nirátataṁsatam* in RV 1.120.7b. Kümmel (2000a: 205) hesitates between interpreting this as a pluperfect or a reduplicated aorist. Bendahman (1993: 130f.) classifies the form as a "perfect preterit" (i.e., a pluperfect), but does not discuss it further. Since there is a well known association between (causative) *aya*-stems and reduplicated aorists in Vedic (see, e.g., Jamison 1983: 216ff.), I have followed Lubotsky (1997: I, 579) in classifying the form as a reduplicated aorist, but nothing hinges on it.

The verbal forms of this root are all active and transitive, but Schaefer (1994: 126) points out that a number of passages (especially of the intensive forms) support a reciprocal meaning "pull sth. back and forth" (between several people), cp.:

RV 4.23.5d

yé asmin kā́maṃ suyújaṃ tatasré
who.NOM.PL him.LOC wish.ACC well.yoked.ACC pull.3PL.PERF.MID

"(The followers) ... who (between them) have pulled their well-yoked wish to/before him."

If this was the original use of this root, it would explain the preference for middle inflection, since reciprocal use is one of the well-established canonical functions of the middle. However, reciprocity is not recoverable from all passages, which is why I list this verb as synchronic deponent.

trā 'protect' [**treH*]

Lit.: Whitney (1885: 67), LIV^2: 646, EWA I: 679f., Narten (1964: 131f.), Narten (1968b: 121f.), VIA I: 292, Kümmel (2000a: 223), Kulikov (2012: 322f.)

Pres.	2sg. *trā́yase*, 3pl. *trā́yante*, ptcp. *trā́yamāṇa-*
Aor.	2sg. subj. *trāsate*, 2du. opt. *trā́sīthām*, ipv. *trā́sva*
Perf.	3sg. *tatre*
Nom.Ag.	*trātár-*

Only in Indo-Iranian. Narten (1964: 131f.) doubts that the modal *s*-aorist forms were part of a productive aorist paradigm. The irregular 2du. subjunctive *trā́sāthe* (RV 5.62.6) is a nonce form. The imperatives 2sg. *trā́sva*, 2pl. *trā́dhvam* (= OAv. *θrāzdūm*) are here interpreted as belonging to the same (marginal) *s*-aorist stem (following Narten and LIV^2), rather than to an otherwise unattested root present (thus, e.g., Whitney (1885), Macdonell (1910); on the late putative root present *trāti* see likewise Narten (1964: 132), Narten 1968a: 122).

dā/day 'distribute' **deh$_2$(i)*

Lit.: Whitney (1885: 70), LIV^2: 103f., EWA I: 700, Narten (1964: 138ff.), Gotō (1987:

172ff.), VIA I: 294, Jasanoff (2003: 105ff.).

Pres. 3sg. *dáyate*, ptcp. *dáyamāna-*

Aor. 1sg.opt. *diṣīya*

Most discussions of this Vedic neo-root assume that it goes back to an original **éi̯e/o-* present **dh₂-éi̯e/o-*. An alternative is offered by Jasanoff (2003: 105ff.), who argues for an original **h₂e-*conjugation *i*-present 3sg. **déh₂-i̯-e*, 3pl. *dh₂-i̯-énti*. The root shape */day/* could be due to a PIE sound law termed the "AHIHA-rule" (**-AHIHA-* > **-AIHA-*; *A* = any vowel, *I* = *i̯* or *u̯*) which would result in a short vowel before the glide in the 1sg. of the paradigm, with subsequent analogical extension of the root shape (see Section 6.2.1).

pat 'have power over, rule' [**poti̯-e-*]

Lit.: EWA II: 72, VIA I: 430, Kulikov (2012: 324ff.)

Pres. 3sg. *pátyate*, *pátyamāna-*

While this verb does not exclusively take accusative objects (locative and instrumental also occur), it is the most common object case in the Rigvedic attestations (18 out of 30 instances). I have therefore left it in the deponent class.

bādh 'beset, oppress' [**bʰeh₁dʰ*]

Lit.: Whitney (1885: 106), LIV²: 68, EWA II: 222, Gotō (1987: 216f.), Schaefer (1994: 156), VIA I: 465f., Kümmel (1996: 74f.), Kümmel (2000a: 330f.)

Pres. 3sg. *bā́dhate*, 3pl. *bā́dhante*, ptcp. *bā́dhamāna-*; int. 3sg. *bābadhe*, ptcp. *bā́badhāna-*

Aor. *bādhiṣṭa* (1x)

Perf. 3sg. *babādhé*, ; int.perf. 3sg. *badbadhé*, ptcp. *badbadhāná-*

Ger., etc. *bādhitá-* 'beset, hemmed in', ger. *bā́dhya-*

Although LIV^2: 68 mechanically sets up a root $*b^heh_1d^h$, verbal forms are only found in Indic, which makes the origin of the long vowel difficult to determine. The root is moreover found in Av. *auui.bāδa* (intr.sg. of a root noun $*b\bar{a}d$-, cp. Ved. *bā́dh-* 'distress, oppression', see Hoffmann and Narten 1989: 82). Nominal cognates may furthermore be attested in Balto-Slavic.

Like the other transitive deponents, *bādh* only makes imperfective verbal stems in the Rigveda, the *iṣ*-aorist *bādhiṣṭa* is attested only once and modelled on the pattern *práthate* : *aprathiṣṭa* (see Narten 1964: 177f., who also discusses later problematic aorist forms of this root).

While the present and the perfect stem (as well as the finite forms of the two intensive stems) are agentive and transitive, four out of the six attestations of the intensive perfect participle *badbadhāná-* are unambiguously passive.[12] They all occur in passages relating to the Indra myth and refer to the waters trapped in the mountain, e.g.:

RV 5.32.2

tvám útsāṁ ṛtúbhir badbadhānā́ṁ áraṁha
you springs.ACC times.INSTR oppress.INT.PERF.MID.PTCP.ACC.PL release.IPF.2SG
ū́dhaḥ párvatasya vajrin
udder.NOM mountain.GEN cudgel.bearer.VOC

"You have released the springs (which have been) hemmed in by these times, the udders of the mountain, O cudgel-bearer!"

The participle *badbadhāná-* in this passage is actually glossed as *bābadhyamāna-* (that is, with overt passive morphology) by the later commentator Yāska (Nir. 10.9, see Gotō 1987: 216, fn. 448).

[12] The recharacterized stem *badbadh-* synchronically functions as a perfect of the intensive according to Schaefer (1994: 156); Kümmel (2000b: 331) follows this analysis.

maṁh 'be generous, give'

Lit.: Whitney (1885: 116), EWA II: 286, Jamison (1983: 130f.), Gotō (1987: 233f.), VIA I: 214, Kümmel (2000a: 353ff.)

Pres.	3sg. *máṁhate*, ptcp. *máṁhamāna-*
Perf.	3sg. *māmahé*, ptcp. *māmahāná-*
Act.	Caus. *maṁháya-*

Jamison (1983: 130) argues that the original meaning of the thematic present was 'be ready', as seen in the idiomatic phrase *dānáya máṁhate* 'is ready to give', whereas the causative originally meant 'make ready'. However, already in the Rigveda the meaning of the two stems has largely converged, and the *áya*-stem no longer functions as a synchronic causative. Moreover, the present stem *maṁha-* appears with accusative objects in the RV, as in RV 4.31.8. I have therefore left this verb in the deponent class.

RV 4.31.8

... sunvaté ... purú cin maṁhase vásu
pressing.DAT many EMPH give.2SG.PRES.MID goods.ACC

" ... you also give many goods to the one who presses (Soma)."

I have followed the literature in keeping this root (at least synchronically) separate from *mah* 'be able to'.

rabh, rambh 'seize' ($\bar{a}$) $*lemb^h$

Lit.: Whitney (1885: 136), LIV^2: 411f., EWA II: 434f., Gotō (1987: 261f.), VIA I: 225, Kümmel (2000a: 418ff.), Kulikov (2012: 195ff.).

Pres.	1sg. *rabhe*, 3pl. *rabhante*, ptcp. *ā-rábhamāna-*
Aor.	*árabdha* (1x)
Perf.	1. 3sg. *rārabhe*; 3pl. *rebhiré*

Pass.	*rabhyáte* 'is seized' (YV+)
Ger., etc.	Ger. *rábhya-*; *sú-saṁ-rabdha-* 'put together tightly'
Act.	1pl.perf. *rarabhmá*

I follow LIV^2: 411ff. and EWA II: 434f. (*pace* VIA I: 226) who set up a single root **lemb^h* for *rabh* and the later root *rambh* 'seize' (cp. YV caus. *rambhayati*), as well as the slightly later (but already Rigvedic) *l*-version of the root (see *labh* below). While verbal forms of this root occur only in Indic, nominal forms are also found in Gk. amphi-laphḗs 'wide-spreading, enormous' and láphūra (n.pl.) 'spoils'.

The formally active 1pl.perf. *rarabhmá* is attested only once in book VIII and has the same meaning as the deponent middle forms of the perfect. It is conceivable that this form was "activized" to fit the metre by losing the extra syllable of the 1pl.mid. ending (*-mahe*). Kümmel (2000a: 419), however, takes the active form to be older, and the short reduplication syllable must indeed be original compared to the lengthened reduplication syllable of the perf.mid. *rārabhe*.

The aorist *árabdha* is formally ambiguous: the root later makes an *s*-aorist (e.g., 1sg. *ārapsi*, AVP) and this is how Whitney (1885: 136) and Macdonell (1910: 379) interpret this form, cp. Narten (1964: 218). However, an old root aorist cannot be excluded. Nevertheless, the aorist paradigm of this root is marginal at best and does not threaten the generalization that "mismatch" verbs in Vedic tend to be restricted to imperfective verbal formations.

labh 'receive, take' **lemb^h*

Lit.: Whitney (1885: 145f.), LIV^2: 411f., EWA II: 434f., Gotō (1987: 261f.), Kümmel (2000a: 436f.)

Perf.	3pl. *anv-á-lebhire*, ptcp. *ā-lebhānā-*
Pass.	*labhyáte* 'is offered' (YV+)
Ger., etc.	*á-labdha-* 'taken, seized'

Younger, semantically differentiated form of *rabh*.

vand 'praise' [?*u̯end]

Lit.: Whitney (1885: 153f.), LIV^2: 681, EWA II: 502f., Gotō (1987: 286), Kümmel (1996: 97f.), Kümmel (2000a: 451f.).

Pres.	3sg. *vándate*, ptcp. *vándamāna-*
Aor.	3sg. *vandi* (1x); 1pl.opt. *vandiṣīmáhi*
Perf.	3sg. *vavande*, 3pl. *vavandiré*
Pass.	3sg.aor. *vandi*
Nom.Ag.	*vanditár-*
Ger., etc.	*vanditá-* 'praised' (AV+), ger. *vánd$_i$ya-* 'praiseworthy'
Act.	Perf. 1/3.sg. *vavanda*, 1pl. *vavandima*

The two perfect active forms attested to this otherwise deponent root have the same meaning as the perfect middle. The active inflection is in all likelihood older (Kümmel 2000a: 452). In terms of diachrony, this means that this verb took only h_2e-conjugation endings. In the perfect, these turned into the perfect active endings and a renewed set of perfect middle endings was created. These eventually replaced the older, but now synchronically active endings in cases like *vand*.

Moreover, we find one passive use of the 3sg.pass.aor. *vandi* in RV 10.61.16. While this may not be entirely expected for a mismatch verb (since morphological form and syntactic function actually match), it does confirm the generalization stated in Section 4.2.2: deponent verbs can passivize if passive morphology that is distinct from active morphology is available, as in this case.

RV 10.61.16

ayáṃ stutó rā́jā vandi vedhā́ḥ
this praised.NOM king.NOM praise.3SG.AOR.PASS worshipper

"This lauded king was praised as (being) a worshipper."

This availability may vary from verb to verb. Crucially, in the case of *vand* we also find one attestation of a middle *iṣ*-aorist in RV 1.82.3, which has precisely the active, transitive syntax expected of a mismatch verb:

RV 1.82.3

susaṃdṛ́śaṃ t$_u$vā vayám mághavan vandiṣīmáhi
good.appearance.ACC you.ACC we generous.VOC praise.AOR.OPT.1PL.MID

"We want to praise you (who is) beautiful to look at, generous one!"

Both the passive and *iṣ*-aorist are relatively new, but isolated formations (Narten 1964: 237, Kümmel 1996: 98), but it is interesting that the availability of a morphological passive/middle distinction was nevertheless exploited in the (very marginal) aorist paradigm of *vand*.

vas 'wear (clothes), dress in' 1. *$\underset{\sim}{u}$*es*

Lit.: Whitney (1885: 156), LIV^2: 692f., EWA II: 529f., VIA I: 419f., Narten (1964: 238f.), Eichner (1968), Kümmel (1996: 98ff.), Kümmel (2000a: 481ff.).

Pres.	3sg. *vaste*, 3pl. *vásate*, 2sg.ipf. *ávasthās*, 3pl. ipf. *avasran*, ptcp. *vásāna-*
Aor.	3sg. *(a)vasiṣṭa*, ipv. *vásiṣva*
Perf.	3sg. *vāvase*, ptcp. *vāvasāná-*
Act.	Caus. *vāsáya-*

I follow Insler (1968), Kümmel (1996), LIV^2, and Villanueva Svensson (2012) in taking

avasran in RV 4.2.19 as belonging to *vas* 'wear' rather than *vas* 'light up'.

RV 4.2.19

ṛtám avasrann uṣáso vibhātíḥ
truth.ACC wear.3PL.IPF.PASS dawns.NOM radiant.NOM.PL

"The radiant dawns were wearing (/were clothed in) truth"[13]

The relationship of the "stative" ending *-ran* to the regular 3pl.ipf. in *-ata* is only briefly discussed by Kümmel. He takes it to be evidence for an old "stative" paradigm of *vaste*, parallel to *śáye*, *śére* 'lie' or *ā́ste*, *ā́sate* (vs. YAv. 3pl. *åŋhāire*) 'sit'. While the dentalless middle endings for the latter two are paralleled by Anatolian (Luv. *zīyari* 'lie', Hitt. *ēša(ri)* 'sit'), the root **u̯es* is otherwise only attested with the renewed 3sg.mid. **-to*. Given the Ved.-Av. pair *ā́sate* – *åŋhāire*, it is nevertheless possible that RV 4.2.19 preserves the more archaic 3pl. ending.

sū 'give birth to' [**seu̯H*]

Lit.: Whitney (1885: 188: 1. *sū* 'impel' and 2. *sū* 'give birth to'), LIV^2: 538, EWA II: 714f., Gotō (1991: 697ff.), VIA I: 325, Kümmel (2000a: 559f.).

Pres.	3sg. *sū́te*, 3pl. *súvate*
Pass.	? 3sg. *sūyata* (1x)
Nom.Ag.	*sūtŕ̄-* (AV)
Ger., etc.	*(sú-)ṣūta-* '-born'
Act.	3sg.perf. *sasūva* (3x); fut.ptcp. *sū́ṣyantyāḥ*

Verbal forms of this root are only found in Indo-Iranian. The present stem may still continue an old middle root present **suH-(t)ór* (cp. Villanueva Svensson 2012: 335), but it

[13] Cp. Insler (1968: 319, fn. 14) "The radiant dawns clothed themselves in truth", Kümmel (1996: 100) "... in die wahre Ordnung gekleidet waren [...] die Morgenröten, als sie aufleuchteten ...".

is noteworthy that Avestan has an active nasal infix present *hunāmi* with the same meaning. Together with the fact that old *media tantum* tend to have full grade rather than zero grade, this makes it unlikely that this root was a deponent before the Old Indic stage. In fact, the attested active perfect stem has the same syntactic behavior and meaning as the present stem, so this root could also be classified as a synchronic semi-deponent. Kümmel (2000a: 559) points out that the formal similarity of *sū-* : *sasúva* to *bhū* 'become' : *babhúva* could mean that the perfect is a relatively young formation (although in that case one would expect it to take the middle endings), and the later root aorist *asūt* (MS) also looks suspiciously similar to the aorist *ábhūt*.

The Rigveda may furthermore have an instance of a formally and functionally passive form of this root in RV 10.132.4 (thus Grassmann 1996: 1562 and Lubotsky 1997: I, 1561):

RV 10.132.4a

asā́v anyó asura sū-ya-ta dyáus
DEM.NOM.SG other.NOM Asura.VOC ???-PASS-3SG.MID heaven.NOM

"That other one, the heaven, is born?/consecrated?, O Asura."

Kulikov (2012: 284ff.) points out that all other Vedic occurrences of the passive stem *sūyá-* are usually taken to belong to 1. *sū* 'impel' and mean "be consecrated" (cp. *rājasúya-* 'royal consecration). Following, e.g., Narten (1986: 110f.), Gotō (1991: 696), Geldner (1951: III, 364)) he therefore takes *sūyata* in this passage to belong to the same root. I have tentatively grouped this form as a passive of *sū* 'give birth to' for now, but must leave the question open.

B.III Unclear cases

īkṣ (abhí, áva, sám) 'see' $*h_3i\text{-}h_3k^u\text{-}se\text{-}$

Lit.: Whitney (1885: 9f.), LIV^2: 297f., EWA I: 203, Jamison (1983: 123f.), Kulikov (2012: 767f.)

Pres. 1sg. *ī́kṣe*, 3du.ipf. *aíkṣetām*

Ger., etc.	*īkṣénᵢya-* 'worth seeing; to be seen'
Act.	Caus. *īkṣáyat*

This neo-root goes back to a reduplicated desiderative $*h_3i\text{-}h_3k^{u}\text{-}s(e)$-. Although it is only sparsely attested in the Rigveda, it catches on in later Vedic, making a periphrastic perfect *īkṣā́m cakre* and an *iṣ*-aorist *aikṣiṣi* (cp. Narten 1964: 142). While the imperfect in RV 10.121.6 is unproblematic, the second possible attestation, *ī́kṣe* in RV 8.79.9 could also belong to *īś* 'have power over' (see below) and is interpreted as 3sg.pres. of that root by Lubotsky (1997: I, 329). I follow Oldenberg (1912: 140) and Renou (1961: 71) in interpreting the form as 1sg.pres. of *īkṣ*:

RV 8.79.9ab:

ava	yat	své	sadhásthe	devānāṃ	durmatī́r	ī́kṣe
PRVB	if	own.LOC	dwelling.LOC	gods.GEN.	malevolence.ACC.PL	see.1SG.PRES.MID

"If I see the malevolence of the gods in my own home"

Semantically, this verb is close to *cáṣṭe* 'see, perceive'; both should probably be classified as experiencer verbs.

īś 'have power over, own, rule' $*Hi\text{-}Hi\hat{k}$-

Lit.: Whitney (1885: 11), LIV^2: 223, EWA I: 207, Kümmel (1996: 23f.), VIA I: 424, Gotō (1997: 184f.), Kümmel (2000a: 123f.)

Pres.	1/3sg. *ī́śe*, 3pl. *ī́śire*, ptcp. *ī́śāna-* (*īśāná-*); 3sg. *ī́ṭe* (1x), 3pl. *ī́śate* (2x)
Nom. Ag.	*īśitar-* 'ruler' (Up.+)

Synchronically a neo-root which is standardly explained as going back to an old perfect ($*Hi\text{-}Hi\hat{k}$- ← $*He\text{-}Ho_{i}\hat{k}\text{-}/Hi\hat{k}$-, e.g., LIV^2: 223, EWA I: 297). This is confirmed by the occasional "perfect" accentuation of the middle participle, *īśāná-*. Although this verb usually

takes genitive objects, there is a parallel in transitive use with an accusative relative pronoun between RV 3.18.3c *yā́vad ī́še* ≈ OAv. *yauuaṯ isai* "as much as I have power" (Narten 1986: 119, but cp. Oldenberg 1912: 140). Another instance of transitive use is RV 7.37.7a, albeit with a transitivizing preverb:

RV 7.37.7a:

abhí yáṃ devī́ nírṛtiś cid ī́še
to.PRVB REL.PRON.ACC goddess.NOM Nirṛti.NOM EMPH have.power.3SG.PRES.MID

" ... over whom even the goddess Nirṛti has power."

Because of its syntax (genitive objects) and originally stative semantics ('hold (power), own'), this verb is therefore probably not a synchronic mismatch verb.

sac 'accompany, follow' $*sek^{u}$

Lit.: Whitney (1885: 182), LIV^{2}: 525f., EWA II: 686f., Narten (1964: 262), Gotō (1987: 319f.), Kümmel (2000a: 538ff.)

Middle	
Pres.	3sg. *sacate*, 3pl. *sácante*, ptcp. *sácamāna-*
Aor.	pctp. *sacāná-* (1x)
Active	
Pres.	2pl.ipv. *sacatā* (RV 10.75.5);[14] 3sg.pres. *síṣakti*, 3pl. *sáścati*; them. 3sg.pres.inj. *saścat*, 2pl.ipv. *saścata*, etc.
Aor.	3sg.subj. *sakṣat*, 1pl.opt.mid. *sakṣīmáhi*
Perf.	1pl. *saścima*, 3pl. *saścur*, 3pl.mid. *sasciré*

Although the middle thematic present is old, synchronically this root takes both active

[14] Gotō (1987: 319).

and middle endings, distributed across different stems. It cannot be classified as alternating because the formally active and the formally middle forms share the same syntactic and semantic behavior.

While *sac* takes accusative objects, instrumental ones are more common, e.g.:

RV 9.74.5a:

árāvīd	aṃśúḥ	sácamāna	ūrmíṇā
roar.3SG.AOR	plant.NOM	following.MID.PTCP.NOM	wave.INSTR

"The Soma-plant roared, uniting with the wave"

Therefore *sac* (or even just the thematic stem *sácate*) should probably not be classified as deponent both on formal and on semantic grounds.

C. Avestan

Leaving aside hapax legomena and verbs whose meaning is unclear means that the Avestan deponent corpus is rather smaller than that of Vedic and the other languages. The following list is based on Kellens (1984: 19ff.), Kellens (1995), and Kümmel (2014a).

- ***aoj*** 'speak, proclaim' ($*h_1\underset{\sim}{u}eg^{uh}$): **pres**.: OAv. 1sg. *aojōi*, YAv. 3sg. *aoxte*, OAv. 1pl. *aogəmadaē-(cā)*, YAv. 3pl. *aojaite*, ptcp. YAv. *aojana-*, **inj**.: OAv. 1sg. *aojī*, OAv. 2sg. *(pairii-)aoγžā*, OAv. 3sg. *aogədā* (YAv. *aoxta*), **subj**.: OAv. 1sg. *aojāi*, **opt**.: OAv. 3sg. *aojīta*. See LIV^2: 253, EDIV: 169f., Kellens (1984: 92ff.), Kellens (1995: 9); Vedic ***uh***, Greek ***eúkhomai***.

- ?***is*** 'have power over, be able to' ($*Hi$-$Hi\hat{k}$-; $*He\underset{\sim}{i}\hat{k}$): **pres**. (< perf.): OAv. 3sg. *isē* (YAv. *ište*), ptcp. *isāna-*, **subj.**: OAv. 1sg. *isāi*, 1pl. *isāmaidē*, **opt.**: YAv. 3sg. *isaēta*. See LIV^2: 223, EDIV: 158, Kellens (1984: 91ff.), Kellens (1995: 12); Vedic ***iś***).

- ***guz*** 'hide' ($*g^{(u)h}e\underset{\sim}{u}\hat{g}^h$): **inj.**: YAv. 3pl. *fra-guzaiiaṇta*, **ipf.**: YAv. 1sg. *aguze*, **opt.**: YAv. 3sg. *guzaēta*. See LIV^2: 199, Kellens (1995: 20), EDIV: 117.

- ***caš*** 'teach' (*$k^{u}e\hat{k}$-s-): **pres.**: YAv. 3sg. *cašte*, ptcp. *cašāna-*. The causative meaning in Avestan justifies the classification as a synchronic mismatch verb (Vedic *cáṣṭe* preserves the meaning 'perceive; appear'). See LIV^2: 383ff., EDIV: 35, Kellens (1984: 92ff.), Kellens (1995: 22).

- ***θrā*** 'protect' (*$treH$): **pres.**: YAv. 3pl. *θrāiieṇte*, inf. OAv. *θrāiiōidiiāi*, **aor.**: OAv. 2du. *qrāzdūm*. See LIV^2: 646, Kellens (1995: 27), EDIV: 394; Vedic ***trā***.

- ***θru*** 'nourish' (*$treh_1\underset{\frown}{u}$): **aor.**: OAv. 3sg. *θraoštā*, **perf.**: YAv. 3sg. *tuθruiie*. See LIV^2: 647, Kellens (1995: 27), EDIV: 394f.

- ***draŋj*** 'hold on to, grasp' (*$dreg^{h}$): **pres.**: YAv. 2sg. *dražahe*, 3sg. *dražaite*, ptcp. *dražimna-*. The *aiia*-causative is formally active. See LIV^2: 126, Kellens (1995: 32), EDIV: 76.

- ***mad*** 'measure' (*med): **pres.**: YAv. 3pl. *vī-māδaiiaṇta*, **subj.**: YAv. 3pl. *vī-māδaiiåṇte*, **aor.subj**.: OAv. 3sg. *masatā*. See Hintze (2000), LIV^2: 423; Greek ***mḗdomai***, ***médomai***.

- ***vaṇd*** 'praise' (*$\underset{\frown}{u}end$): **pres.opt.**: YAv. 3sg. *vaṇdaēta*. See LIV^2: 681, Kellens (1995: 50), EDIV: 205; Vedic ***vand***.

- ?***vah*** 'wear' (*$\underset{\frown}{u}es$): **pres**.: OAv. 3sg. *vastē*, ptcp. *vaŋhāna-*; them. YAv. 3sg. *vaŋhata*, **act.**: YAv. 3pl. *vaŋhəṇti*, 3sg.ipv. *vaŋhatu*. See LIV^2: 692f., Kellens (1995: 53), EDIV: 405; Vedic ***vas***.

- ?***raš*** 'injure, damage' (*$(h_1re\hat{k}s)$): **pres.**: YAv. 3pl. *rāšaiieṇte*, OAv. inf. *rāšaiieŋhē*. The deponent status is uncertain because of the scarcity of attestations, but *rāšaiieṇte* in Yt.10.21 is active and transitive ("damage something") without any "middle" meaning. See LIV^2: 505, Kellens (1995: 57), EDIV: 315.

D. Greek

D.I Introduction

The following is a list of Homeric deponents (*Iliad* and *Odyssey*). Optional prepositions follow the verb entry; if a verb is attested *only* with a preposition in Homer, it precedes the verb entry (in brackets). The list follows the Greek alphabet.

Only forms that are syntactically passive are listed under "pass.". For example, if a verb makes both an *s*-aorist and a *thē*-aorist, and both are syntactically active and transitive, the latter will be listed under "aor." and not under "pass." despite its traditional classification as "passive aorist".

D.II Greek deponents

aínumai (ap(o)-, ex-, sun-) 'take, seize' 1. $*h_1 a\underset{\frown}{i}$

Lit.: LIV^2: 229, GEW: I, 41, DELG: I, 36, van de Laar (2000: 68), Beekes (2010: 40).

Pres. 3sg. *aínutai*, 3sg.ipf. *aínuto*, ptcp. *ainúmenos*

The root is also attested without the nasal infix in the *to*-participle *éx-aitos* 'selected' and belongs to the same root as Toch. A *e*-/Toch. B *ai*- 'give; take (mid.)' and Hitt. *pai*- 'give', from $*p(e)\text{-}h_1 o\underset{\frown}{i}$- (Melchert 1989). However, Jasanoff (2003: 94) points out that Anatolian is the only branch of the family in which the root is attested with apparent zero grade,[15] with full grade actually restricted to Hittite (e.g., Pal. *pīša*-, CLuv. *pīya*-, Lyc. *pije*-, etc.). He suggests keeping the Anatolian root separate from Greek and Tocharian and sets up a root $*b^h\underset{\frown}{i}eH/b^hiH$ that may also underlie Toch. B *pito* 'price' (Jasanoff 2003: 94, fn. 206). This means that the root of *aínumai* may be set up with $*h_2$ (similarly Beekes 2010: 40 based on Kloekhorst 2008: 615f., who traces the family of Hitt. *pai*- back to $*h_1 ep$ 'seize, grab'). The consistent full grade of the root may indicate that this verb was a *medium tantum* already in the proto-language, falling under Villanueva Svensson (2012)'s generalization that athematic

[15] Ved. *inóti* 'impels' belongs to $*h_1 e\underset{\frown}{i}$ 'go', LIV^2: 232f.

middle root presents in PIE had full grade of the root (*pace* LIV^2: 229, fn. 3, where the full grade of *aínumai* is argued to indicate that the formation may be secondary). The original meaning may well have been canonical "take for oneself", explaining the middle inflection, but I have left this verb in the deponent class for Greek since the self-benefactive meaning is no longer evident, cp. Od.14.144 with a non-agentive subject:

Od.14.144

allá m'Odussêos póthos aínutai oikhoménoio
but me.ACC+Ulysses.GEN longing seize.3SG.PRES.MID go.PRES.MID.PTCP.GEN

"... but longing for Ulysses (who is) gone seizes me."

alé(u)omai (hup-, hup-ex-) 'shun, avoid, flee' *$h_2leu̯$

Lit.: LIV^2: 278, GEW: I, 66, DELG: I, 58, van de Laar (2000: 72), Beekes (2010: 65).

Pres.	3pl.ipf. *aléonto*, 3sg.subj. *aléētai*; 3sg.subj. *aleúetai*
Aor.	3sg. *aleúato*, ptcp. *aleuámenos*; 2pl.ipv. *aléasthe*
Act.	Pres.ptcp. *alússontes*, fut.inf. *alúxein*, 3sg.aor. *éluxe*

anaínomai (ap-) 'refuse, deny'

Lit.: GEW: I, 40f., DELG: I, 35f., Beekes (2010: 39f.)

Pres.	1sg. *anaínomai*
Aor.	3sg. *anénato*, 3sg.subj. *anénētai*

Presumably a denominal verb **ana-aínomai* to *aînos* 'speech, praise'.

arnéomai 'refuse, deny' *h_2res

Lit.: LIV^2: 284, GEW: I, 145f., DELG: I, 112, van de Laar (2000: 86), Beekes (2010: 135).

Pres.	3sg. *arneîtai*
Aor.	Inf. *arnḗsasthai*, 2sg.opt. *arnḗsaio*

The comparison with OAv. *rārəšiieiṇtī* 'defect, rebel' < **h₂ra-h₂r̥s-i̯a-* and the causative YAv. *råŋhaiiən* 'cause to rebel' suggests that the deponent behavior of this verb is an innovation specific to Greek.

árnumai (ex-) 'carry off, win' 2. **h₂er*

Lit.: LIV^2: 270f., GEW: I, 146, DELG: I, 112, Rix (1970: 85), van de Laar (2000: 86), Beekes (2010: 136).

Pres.	2du.ipf. *arnústhēn*, ptpc. *arnúmenos*
Aor.	3pl. *áronto* (them.); 1pl. *ērámetha* (*s*-aor.)

Both the (thematic) aorist and the present stem are old, cp. Arm. *arēri*, pres. *arnowm*. Greek also has an *s*-aorist in complementary distribution with the thematic aorist; the *s*-aorist is restricted to augmented forms. Moreover, the aorist forms partially overlap formally with those of *aeírō* 'lift, raise up' and mutual influence cannot be excluded.

daíomai 'divide, distribute' **deh₂(i̯)*

Lit.: LIV^2: 103f., GEW: I, 341f., DELG: I, 247f., van de Laar (2000: 108) (+ *datéomai*), Beekes (2010: 297f.)

Pres.	3sg.ipf. *daíeto*, ptcp. *daiómenos*
Perf.	3pl. *dedaíatai* (1x)
Pass.	3sg.pres. *daíetai*, 3pl.perf. *dedaíatai*, ptcp. *daiómenos* (2x)
Nom.ag.	PN *Daítōr*; *daitrós* 'carver'

This verb goes back to an *i*-present (cp. Ved. ***dáyate*** above); the glide was presumably preserved in analogy with verbal and nominal formations from the same root where it was followed by a stop (e.g., *daís*, *-tós* 'portion', *daítē* 'meal', *daitrós* 'carver', etc.) or the *-s-* of the aorist and future. The active future *daísō* is attested already in Homer in the meaning 'will hold a banquet', as is the aorist stem *daísa-*. Synchronically, these are treated as belonging to

the inner-Greek present *daínūmi* 'hold a banquet' and are therefore not listed as active forms of the averbo of *daíomai*. This root and its derivatives are problematic in several respects (see the discussion of their Proto-Indo-European pre-forms in Section 6.2.1). Synchronically, *daíomai* is furthermore conspicuous in that it can be both syntactically active with a direct object (i.e., deponent) and syntactically passive. Of the two Homeric attestations of the finite present stem, one is active and the other one is passive.

Act.: Od.15.140:

pár dè Boēthoḯdēs kréa daíeto kaì néme moíras
nearby PART B.NOM meat.ACC divide.3SG.IPF.MID and distribute.3SG.IPF.ACT portions.ACC

"And nearby the son of Boethous carved up the meat and distributed the portions."

Pass.: Od.1.48:

allá moi amph' Odusêi daḯphroni daíetai êtor
But me.DAT about Ulysses.DAT skillful.DAT divide.3SG.PRES.MID heart.NOM

"But my heart is divided for/on account of skillful Ulysses"

The perfect in Od.1.23 is likewise passive ("are divided"), as are two instances of the present participle (Od.5.61 and 9.551). The two active passages (Od.15.140, ptcp. *daiómenos* in Od.17.332) both take *kréa* 'meat' as direct object. The comparison with Sanskrit suggests that the transitive use is older, so the passive use may be due to an inner-Homeric reanalysis of *daíomai* as an oppositional middle/mediopassive to an unattested active **daíō* (which in turn could be interpreted as underlying the future *daísō* and the aorist *édaisa*).

datéomai (apo-) 'divide up' **dh₂-t-*

Lit.: (LIV^2: 103f.), GEW: I, 351f., DELG: I, 254, van de Laar (2000: 108) (+ *daíomai*), Beekes (2010: 305f.).

Pres.	3pl. *datéontai*, 1pl.subj. *dateṓmetha*; (3sg.ipf. *dasásketo*)
Aor.	3sg. *edássato*, ptcp. *dassámenos*; 1pl.opt. *dasaímetha*, inf. *dásasthai*
Perf.	3sg. *dédastai* (3x, pass.)
Fut.	3pl. *dásontai*; 1sg. *apo-dássomai*
Pass.	3sg. perf. *dédastai* (3x)

This verb belongs to the same PIE root as *daíomai* with which it overlaps both in its syntax and meaning. The perfect and the aorist are already found in Mycenaean (perf. PY Vn 20 *e-pi-de-da-to* /epi-dedastoi/, aor. PY Wa 917 *ǰo-da-sa-to̤* /hō dasato/, cp. Ventris and Chadwick 1973: 538). The three Homeric attestations of the perfect are passive, like the perfect of *daíomai*, e.g.:

Il.1.125:

allà tà mèn políōn exepráthomen, tà dédastai, ...
but that PART cities.GEN pillage.1PL.AOR.ACT that divide.3SG.PERF.MID

"But that which we pillaged from the cities has been divided up, ..."

dékhomai (ana-, apo-, ek-, para-, pros-, hupo-) 'accept, receive' *$de\hat{k}$

Lit.: LIV^2: 109ff., GEW: I, 373f., DELG: I, 267ff., Narten (1968a), Harðarson (1993: 62f., 201f.), van de Laar (2000: 113ff.), Beekes (2010: 320f.).

Pres.	3pl. *dékhatai*, 1pl.ipf. *edégmēn*, ptcp. *dégmenos*; 3sg. *dékhetai*, 1pl.subj. *dekhṓmetha*, 1sg.opt. *dekhoímēn*; 3pl. *deidékhatai*
Aor.	3sg. *dékto*; 3sg. *déxato*, ptcp. *dexámenos*;
Perf.	2sg.ipv. *dédexo*, ptcp. *dedegménos*
Fut.	3sg. *déxetai*
Nom.Ag.	*dektḗs* 'beggar', *déktōr* 'accepter' (Aesch.), *apo-dektḗr* 'receiver' (Xen.)

The *s*-aorist is attested already in Mycenaean (KN L 641 *de-ka-sa-to* /deksato/, PY Pn

30 *o-de-ka-sa-to* /hō deksato/), the root aorist may be attested in Myc. KN Le 642 *de-ko-to* /dekto/ (but see Harðarson (1993: 201f.)). Note that the comparison with the other Indo-European languages makes it clear that the deponent/*medium tantum* behavior was generalized in Greek only. Vedic, for example, has an active Narten present *dāṣṭi* 'makes offerings, honors', a nasal infix present *dāśnoti* id., and a formally active perfect *dadā́śa*. Other active forms include Latin *doceō* 'teach', *discō* 'learn', Greek *dokeĩ* 'seems', etc. (see LIV^2 loc.cit.). The Greek deponent behavior can be understood as the grammaticalization of a self-benefactive of this root meaning 'take, appropriate for oneself'.

dēléomai (dia-) 'hurt, spoil, destroy'

Lit.: GEW: I, 378, DELG: 271f., Beekes (2010: 323f.).

Aor.	3sg. *delésato*, 3pl. *edēlésanto*, inf. *dēlésasthai*, 3sg.opt. *dēlésaito*
Fut.	3sg. *dēlésetai*
Nom. Ag.	*dēētḗr* 'destroyer' (Hom., *Epigr.* 14.8)

One of the rare cases of a Homeric deponent without an attested present stem. Most commentators assume that this verb is an **éi̯e/o*-iterative-intensive to the root underlying Latin *dolō* 'chip, hack' and *doleō* 'suffer, be in pain', **del* or **delh$_1$* (thus LIV^2: 114). However, a laryngeal-final root seems to be excluded by the **i̯e/o*-present *dállei* 'harm' (Hsch.), which could reflect zero grade of the root (cp. also *phreno-dalḗs* 'mind-destroying' (Aesch.) and *pan-dálētos* 'destroyed' (Hippon.), all with -ă- in the root syllable), but old R(*ă̆*)-ablaut is also possible and does not mean that this verb is "non-IE", *pace* Beekes (loc.cit).

díemai, díomai (ex-apo-) 'speed, chase off' **dei̯h$_1$*

Lit.: LIV^2: 107, GEW: I, 389f., DELG: I, 281, García Ramón (1991), van de Laar (2000: 119), Beekes (2010: 332).

Pres. stem	3pl. *díentai* (itr.), inf. *díesthai* (itr.); them.: 1sg.subj. *díōmai*, 3sg.opt. *díoito*

Act. 3pl.ipf. *en-díesan*; them. 1sg.ipf. *díon*

The isolated thematic active form may belong to (or at least be influenced by) *deídō* 'fear' (aor. *díon*), cp. GEW, DELG, loc.cit. The two unambiguously athematic forms *díentai* and *en-díesan* may go back to an old root present (thus LIV^2 loc.cit.), but could also be analogical to *híentai*, *híesan* 'speed, hasten' (*híēmi*). Two of the Homeric forms are intransitive ('speed, hurry'), but the others are transitive ('chase'). I therefore treat this verb as a synchronic deponent, even though the comparison with other IE languages suggests that the intransitive use is the older one (cp. Ved. *dī́yanti* 'fly').

dízēmai 'seek' *$\hat{i}i$-$\hat{i}eh_2$-

Lit.: García Ramón (1993), García Ramón (1999b), LIV^2: 310f., GEW: 391, DELG: I, 281f., van de Laar (2000: 119f.), Beekes (2010: 333).

Pres. 2sg. *dízēai*, ptcp. *dizémenos*

Fut. 1pl. *dizēsómetha*[16]

Nom. Ag. *Zētḗr* 'avenger' (Hsch.)

eréptomai 'bite off, feed on' *$(h_1)rep$

Lit.: LIV^2: 507, GEW: I, 552, DELG: II, 367, van de Laar (2000: 149), Beekes (2010: 453).

Pres. Ptcp. *ereptómenos*

Beside the present participle, an *s*-aorist may be attested in Od.20.234 *an-ērépsanto* (the manuscripts usually have -*ēreípsanto*), cp. GEW, DELG loc.cit.

[16] Or aor.subj., van de Laar (2000: 119, fn. 307).

érūmai, erúomai, rhúomai, rhûmai 'protect, guard, defend' 1. *u̯er

Lit.: LIV^2: 684f., GEW: I, 568f., DELG: II, 376, Solmsen (1901: 245ff.), Peters (1980: 94), van de Laar (2000: 152), Hackstein (2002: 123ff.), Beekes (2010: 466f.).

Pres.	3sg.ipf. *erúeto*; 3pl.ipf. *rhűato*, inf. *rhûsthai*; inf. *érūsthai*; inf. *rhuésthai*
Aor.	3sg. *eirússato*; 3sg. *eirúsato*; 3sg. *(er)rűsato*;
Perf.	3pl. *eirűatai*[17]
Fut.	3sg. *erússetai*
Nom.ag.	*rhūtḗr* 'guard, protector', *rhűtōr* (Aesch.)

The oldest present stem presumably reflects an ablauting *u*-present that underlies *érū-mai* < **(u̯)er-ū-* and *rhû-mai* < **wr(-)ū-*, but both the morphology and the phonology of these and the associated forms are problematic, as is the status of the initial digamma, which seems to be missing entirely (DELG, loc.cit., but cp. Solmsen 1901, loc.cit., for a possible solution). van de Laar (2000: 152) proposes a dissimilation of (Proto-Greek) **we-wrū-mai* > **e-wrū-mai* in the perfect, and analogical introduction of the digamma-less root variant into the present stem. Hackstein (2002: 124f.) posits a root **su̯erh₃* and claims that this root also underlies Gk. 3pl. *órontai* 'are watching over, taking care of', YAv. *nī haraitē* 'preserves', *-hauruua-* 'watching over', etc. (cp. LIV^2: 534: 1. **ser*), and Lat. *servō* 'save, protect'. Via metathesis of **u̯R̥(H)* > **Ru(H)* (cp. Mayrhofer 1986: 161f.), this would result in a weak stem variant **sruh₃* which would give Gk. *rhū°* (*rhûmai*) directly. Crossing with the full grade variant **su̯er(o)°* could then have given the stem allomorph *erū°*. Mycenaean, however, preserves initial digamma in *-u-ru-to* /*-wruntoi*/ (cp. Ventris and Chadwick 1973: 589), which Hackstein explains as analogical reintroduction of the digamma from the full grade forms.

Hackstein's proposed connection of the Greek forms with the Avestan and Latin forms cited above is controversial, but his core proposal of the metathesis rule must be correct, since structurally there is no good alternative that would give *rhū°*. See Section 6.3.1 for a longer discussion of possible connections outside of Greek.

[17] Synchronically used as present.

eúkhomai (ep-) 'pray, declare' $*h_1\underset{\sim}{u}eg^{uh}$

Lit.: LIV^2: 253, GEW: I, 595f., DELG: II, 389, Narten (1968a), Harðarson (1993: 71), van de Laar (2000: 154f.), Beekes (2010: 485f.).

Pres.	3sg. *eúkhetai*, ptcp. *eukhómenos*
Aor.	3sg. *eúxato*, 1sg.opt. *euxaímēn*, ptcp. *euxámenos*

The Greek present is usually analyzed as a thematization of a reduplicated present $*h_1e$-$h_1\underset{\sim}{u}og^{uh}/h_1ug^{uh}$- (e.g., LIV^2 loc.cit., Lindeman (1972), Harðarson 1993 loc.cit., Villanueva Svensson 2012: 335, fn. 6), cp. Ved. 3pl. *óhate* 'they are praising', ***uh*** 'praise'. The athematic 3sg. *eũkto* (*Thebaïs* Fr. 3.3), if it is old, could be either an old root aorist or an old athematic imperfect corresponding to the OAv. 3sg. *aogədā* (Narten 1968a: 11f.). Other athematic forms attested in post-Homeric Greek are, e.g., the 1sg. *ēúgmēn* (Soph.)) and the ptcp. *eugménos* (Hes.)). The Mycenaean form *eu-ke-to* (PY Eb 297, Ep 704) is usually interpreted as thematic 3sg. /*eukhetoi*/ (cp. Ventris and Chadwick 1973: 547).

The post-Homeric perfect *ēũktai* is passive.

hīláskomai 'appease' $*selh_2$

Lit.: LIV^2: 530, GEW: I, 720ff., DELG: 462, Klingenschmitt (1970), van de Laar (2000: 174), Beekes (2010: 586f.).

Pres.	3pl. *hīláskontai*, inf. *hīláskesthai*; 3pl. *hiláontai* (ĭ)
Aor.	ptcp. *hilassámenoi* (ĭ), 1sg.subj. *hīlássomai*, 2sg.subj. *hilásseai* (ĭ), 1pl. *hīlasómestha*
Act.	2sg.pres.ipv. *hī́lēthi* 'be gracious!'; 3sg.pres.subj. *hīlḗkēisi*

hīláskomai reflects $*si$-$s\underset{\circ}{l}h_2$-*(sk̂e/o-)*; the unexpected short root vowel (also in the reduplicated present *hílamai* (Hom. hym.) ← $*si$-$s\underset{\circ}{l}h_2$-, whose thematized variant is attested in Homeric *hiláontai*) must be analogical, maybe to the *s*-aorist (LIV^2 loc.cit., Beekes loc.cit.,

Klingenschmitt 1970: 78). The perfect ipv. *hílēthi* stands for *eílēthi* (Hsch.) $<$ **se-sleh$_2$-/s̥lh$_2$-* (and note that the perfect is intransitive).

This group of verbs is usually thought to belong to the same root as Latin ***sōlor*** 'console, comfort', likewise a deponent. However, the Latin verb is ultimately denominal, and the deponent inflection of the Greek and Latin continuants of this root may therefore have arisen independently.

[iptomai] 'oppress, beset'

Lit.: GEW: I, 733, DELG: II, 467, Beekes (2010: 597).

Aor. 2sg. *ípsao*

Fut. 3sg. *ípsetai*

One of the rare cases in which a Homeric deponent is attested only in the aorist (but note that there are only three Homeric attestations of this verb and very few post-Homeric ones). The etymology is unclear.

kaínumai (apo-) 'excel, surpass' **k/ĥend*

Lit.: LIV^2: 351, GEW: I, 754f., DELG: II, 480, van de Laar (2000: 175f.), Beekes (2010: 616).

Pres. 3sg. ipf. *ekaínuto*

Perf. 3sg. *kékastai*, ptcp. *kekasménos*

kélomai 'exhort, command, drive' **kel*

Lit.: LIV^2: 348f., GEW: I, 817f. (*kéllō*), DELG: II, 513, van de Laar (2000: 182), Beekes (2010: 670).

Pres. 3sg. *kéletai*, 1sg.opt. *keloímēn*

Fut. 3sg. *kelḗsetai*

I follow Bendahman (1993: 110ff.) and LIV^2: 361f. in grouping the reduplicated aorist *kékleto* with *kaléō* 'call' rather than with *kélomai*. I also keep *kéllō*, *okéllō* (< **kel-i̯e/o-*) 'drive a ship ashore, land' (aor. *ékelsa*) synchronically separate, although they in all likelihood go back to the same root.

[ktáomai] 'acquire', perf. 'hold, possess' **tk-eh$_1$-*

Lit.: LIV^2: 619, fn. 1, GEW: II, 31ff., DELG: II, 590f., van de Laar (2000: 197), Beekes (2010: 788f.).

Aor.	3sg. *ektḗsato*
Perf.	inf. *ektêsthai*
Nom.Ag.	*kteáteira* f. 'owner' (Aesch.)

According to LIV^2 loc.cit., the neo-root *ktē-* was abstracted from an old denominative **i̯e/o-*present **tk-eh$_2$-i̯é/ó-* which underlies *ktáomai*. This present, however, is attested relatively late, i.e., Soph., Hdt.+. I therefore follow Jasanoff (2003: 104, fn. 32) in setting up the root as **tkeh$_1$*. This seems to be required by the Ionic present *ktéomai* anyway; the form *ktáomai* is presumably analogical to **páomai* 'acquire' (fut. *pásomai*, perf. *pépāmai*) < **k/ĥu̯eh$_2$*.

líssomai 'beg, pray' **lei̯t*

Lit.: LIV^2: 410f., GEW: II, 130, DELG: III, 643f., van de Laar (2000: 209), Beekes (2010: 866).

Pres.	1sg. *líssomai*, 1sg.subj. *líssōmai*, ptcp. *lissómenos*; 3sg.ipf. *lissésketo*
Aor.	1sg. *ellisámēn*; inf. *litésthai*, 1sg.opt. *litoímēn*

maíomai (amphi-, eis-, epi-) 'seek' **mes*

Lit.: LIV^2: 441, GEW: II, 161f., DELG: III, 658f., Beekes (2010: 892f.).

Pres.	3sg.ipf. *ep-emaíeto*, inf. *maíesthai*, ptcp. *maiómenos*

Aor.	3sg. *ep-emássato*, ptcp. *epi-massámenos*
Fut.	3sg. *mássetai*
Nom.Ag.	*mastḗr* 'seeker' (Soph.)

médomai 'think of, take care of' **med*

Lit.: LIV^2: 423, GEW: II, 191, van de Laar (2000: 214), Beekes (2010: 918f.).

Pres.	3spl.ipf. *médonto*, 3sg.subj. *médētai*, 3sg.opt. *medoíato*
Fut.	1sg. *medḗsomai*
Act.	Ptcp. *médōn*; ptcp. *médeōn*, both 'ruler, ruling'

I follow the standard practice of having separate entries for *médomai* and *mḗdomai* (below), but their semantics and paradigms are similar and warrant the reconstruction of an old middle with Narten ablaut (**mḗd-/méd-*, cp. LIV^2 loc.cit., Villanueva Svensson 2006) which split into separate paradigms in Greek (for alternative explanations see GEW, l.c., and Beekes 2010, loc.cit.). The active paradigm is only attested in two present participles with a different meaning than the middle ('ruling'), these are almost exclusively restricted to just two Homeric formulae (cp. van de Laar 2000: 214, fn. 768 & 769) and do not cast doubt on the synchronic deponent status of this verb. Note that only *mḗdomai* regularly takes accusative object; *médomai* usually takes the genitive.

(epi-)mémphomai 'blame, reproach'

Lit.: GEW: II, 207, DELG: 686, van de Laar (2000: 216f.), Beekes (2010: 930).

Pres.	3sg. *epi-mémphetai*

No etymology.

mḗdomai (epi) 'plan, devise' **med*

Lit.: LIV^2: 423, GEW: II, 223, DELG: III, 693, van de Laar (2000: 217), Beekes (2010:

941).

Pres.	3sg. *mḗdetai*
Aor.	3sg. *(e)mḗsato*
Fut.	2sg. *mḗseai*
Nom.Ag.	*mḗstōr* 'adviser, counsellor' (+ gen.)

See *médomai* above.

mnáomai, mnômai 'be mindful of take care of; court' *$mneh_2$*

Lit.: LIV^2: 447, GEW: II, 238ff. (*mimnḗskō*), DELG: III, 702f. (*mimnḗskō*), (van de Laar (2000: 218 (+ *mimnḗskō*), Beekes (2010: 953f. (*mimnḗskō*)).

Pres. stem	3sg. *mnãtai*, 3pl. *mnôntai*, 3pl.ipf. *mnṓnto*, ptcp. *mnṓmenos*, *mnōómenos*; 3sg.ipf. *mnásketo*
Nom.Ag.	*mnēstḗr* 'suitor' (*mnḗstōr*, Aesch.)
Act.	Pres. *mimnḗskō* 'think of, remember', aor. *émnēsa*, fut. *mnḗsō*, etc.

Most commentators have connected the Greek root *mnā* < *$mneh_2$* with PIE **men* 'think' (Gk. *maínomai* 'rage'). The *$\hat{i}e/o$*-present *mnáomai* (< *$mn̥h_2$-$\hat{i}é/ó$-*) has taken on the new meaning 'woo, court' in Homer, the older meaning 'think of, remember' is found in the new, secondarily reduplicated present *mimnḗskō* (cp. Anacr. *mnḗsketai*). The *s*-aorist and future forms as well as the perfect *mémnēmai* synchronically belong to *mimnḗskō* rather than to *mnáomai*.

olophűromai 'lament, bewail'

Lit.: GEW: II, 382, DELG: 795, Beekes (2010: 1073).

Pres.	3sg. *olophűretai*, ptcp. *olophűrómenos*
Aor.	3sg.aor. *olophűrato*

Cp. *odűromai*, *kinűromai*, *minűromai* for the suffix. The root may be the same as that of Arm. *oł́b* 'lament', Lith. *ulbúoti* 'sing' (**Helb*^{h}?).

ónomai 'scorn' **h*$_2$*neh*$_3$

Lit.: LIV^2: 282, GEW: II, 397, DELG: 804, Pinault (1982: 20ff.), Hackstein (1995: 66f.), van de Laar (2000: 232), Beekes (2010: 1085f.).

Pres. 2sg. *ónosai*, 3pl. *ónontai*, 3sg.opt. *ónoito*

Aor. 1sg. *ōnosámēn*; ptcp. *onossámenos*

Fut. 3sg. *onóssetai*

The Homeric form *ónato* (Il.17.25) is a nonce form and cannot be counted as evidence for a present **ónamai* (see Hackstein 1995: 66).

pénomai (amphi-) 'work at, attend to, toil' **(s)penh*$_1$

Lit.: LIV^2: 578, GEW: II, 504ff., DELG: 881f., van de Laar (2000: 243), Beekes (2010: 1172).

Pres. 3pl.ipf. *pénonto*, inf. *pénesthai*

In the intransitive use, *pénomai* means 'busy oneself with, toil, work'. The transitive use 'work at something' is mainly found in the phrase *daîta pénomai* 'prepare a banquet', e.g.:

Od.4.531:

hetérōthi d'anőgei daîta pénesthai
other.side.ADV PART+command.3SG.ACT feast.ACC prepare.INF.MID

" ... but on the other side he commanded (them) to prepare a feast."

ponéomai (amphi-) 'work at, attend to' **(s)penh*$_1$

Lit.: LIV^2: 578, GEW: II, 504ff. (*pénomai*), DELG: 881f. (*pénomai*), van de Laar (2000: 243

(*pénomai*)), Beekes (2010: 1172 (*pénomai*)).

Pres.	3sg.ipf. *poneĩto*, 3pl.ipf. *ponéonto*, ptcp. *poneúmenos*
Aor.	3sg. *ponḗsato*
Perf.	3sg. *pepónēto*

Cp. *pénomai* above; *ponéomai* (< **sponh₁-éi̯e/o-*, later act.) has the same range of meanings as *pénomai*, which it begins to replace already in Homer.

sī́nomai 'rob, plunder'

Lit.: GEW: III, 708f., DELG: 1005f., Beekes (2010: 1334f.), Hollifield (1978).

Pres.	3sg. *sī́netai*; 3pl.ipf. *sī́néskonto*
Nom.Ag.	*sī́ntēs* 'robber, destroyer'

sképtomai 'look around, examine' **spek̂*

Lit.: LIV^2: 575f., GEW: III, 725f., DELG: 1014f., van de Laar (2000: 270f.), Beekes (2010: 1347f.).

Pres.	3sg.ipf. *sképteto*
Aor.	Ptcp. *skepsámenos*
Nom.Ag.	*skopós* 'scout, spy'

tī́numai (apo-) 'chastise, punish, take revenge' **kʷ̂(e)i-neu̯/nu-*

Lit.: LIV^2: 379f., GEW: III, 902f., DELG: 1120f., Wackernagel (1916: 77ff.), van de Laar (2000: 291f.), Beekes (2010: 1486f.).

Pres.	3sg. *tínutai*, 3pl. *tínuntai*, 3sg.ipf. *ap-etínuto*, ptcp. *tinúmenos*
Nom. Ag.	*títās* 'avenger' (Aesch.), *títai* (Hsch.)
Act.	Pres.inf. *tínein* (pres. *tínō*), fut. *teísō/tī́sō*, aor. *éteisa/étīsa*

Homeric *tī́numai* (for *teínumai*; this may have replaced older **tínumai* in analogy to the full grade of the *s*-aorist and future stems (thus LIV^2: 380), but an old full grade is also possible, see Wackernagel 1916 (loc.cit.)) continues an athematic middle **nu*-present of the root **k^{u}ei̯* 'punish'. This verb was thematized early on, giving Homeric (alternating) *tī́nō–tī́nomai* < **tinu̯-o-* (Attic has *tínō*, *tínomai*), but the athematic stem is listed here because it is exclusively deponent.

Greek also has an alternating future and *s*-aorist stem, the latter may already be attested in the Mycenaean mid.ptcp. *qe-ja-me-no* /k^{w}ei^{h}amenos/ (LIV^2 (loc.cit), but has also been argued to reflect a root aorist participle (DELG (loc.cit)).

titúskomai 'aim at; make ready, prepare'

Lit.: GEW: III, 906, DELG: 1123, van de Laar (2000: 289 (*teúkhō*)), Beekes (2010: 1489).

Pres.	3sg.ipf. *titúsketo*, ptcp. *tituskómenos*

This verb ultimately belongs to the group of verbs in Greek that go back to PIE **d^{h}eu̯g^{h}* 'be useful, happen to/upon' and **teu̯k* 'hit, push' (e.g., *teúkhō* 'make ready, prepare', aor. *eté-tukon*; *tunkhánō* 'succeed, happen', aor. *étukhon*, etc.). The two roots apparently influenced each other and are not always easily distinguishable (cp. LIV^2: 148f., 640). The synchronically isolated **ske/o*-present *titúskomai* could go back to either Proto-Gk. **ti-tuk-ske/o-* or **ti-tukh-ske/o-*.

pseúdomai 'lie, tell a lie'

Lit.: GEW: III, 1132f., DELG, van de Laar (2000: 319).

Pres.	3pl.ipf. *pseúdonto*, ptcp. *pseudómenos*
Aor.	Ptcp. *pseusámenos*
Fut.	1sg. *pseúsomai*
Nom.Ag.	*pseústēs* 'liar'

Although this verb is usually intransitive, it can occur with direct objects in the meaning 'tell a lie, lie about sth., belie', e.g.:

Il.7.351-2:

nũn d'hókria pistà pseusámenoi makhómestha
now PART+oaths.ACC faithful.ACC lie.AOR.MID.PTCP.NOM.PL fight.1PL.PRES.MID

"Now we fight, having lied (about) our oaths of faith."

D. III Unclear cases

This section contains transitive middle-only verbs that should probably be classified as canonical middles synchronically.

dúnamai 'be able (to), be strong' $*deu̯h_2$

Lit.: LIV^2: 123, GEW: I, 423f., DELG: I, 301, van de Laar (2000: 123), Beekes (2010: 358).

Pres.	1sg. *dúnamai*,1sg.opt. *dunaímēn*, ptcp. *dunámenos*
Aor.	3sg. *(e)dunḗsato*; 3sg. *dunásthē*
Fut.	1sg. *dunḗsomai*
Nom.Ag.	*dunástēs* 'ruler' (Aesch.), *dunástōr* (Eur.)

In the majority of cases, this verb takes an infinitival complement in a subject control construction. However, in a few cases *dúnamai* takes an accusative object (usually a pronoun, indefinite adjective, or quantifier), e.g.:

Od.4.237:

Zeùs agathón te kakón te didoĩ: dúnatai gàr
Zeus.NOM good.ACC and bad.ACC and give.3SG.PRES.ACT be.able.3SG.PRES.MID PART
hápanta
everything.ACC

" ... Zeus gives good and bad (things): For he can do everything."

Note that both the *s*-aorist and the *thē*-aorist have the same meaning (that is, the latter is not "passive").

óssomai (epi-, proti-) 'see, sense' $*h_3ek^u_\wedge$

Lit.: LIV^2: 297, GEW: II, 407f. (*ópōpa*), II, 409f. (*horáō*), II, 436 (*óssomai*), DELG: 813ff. (*ópōpa*, *horáō*), 832 (*óssomai*), van de Laar (2000: 232 (*op-*), 233 (*horáō*)), Beekes (2010: 1094 (*ōpōpa*), 1095f. (*horáō*), 1118 (*óssomai*)).

Middle

Pres. 3sg. *ósseto*, ptcp. *ossómenos*

Fut. 3sg. *ópsetai*, ptpc. *opsómenos*

Active

Pres. [*horáō*]

Perf. *ópōpa*

The present *óssomai* (< $*h_3k^u_\wedge$-*i̯é/ó-*) is replaced by the suppletive verb *horáō* (< $*sor$-*ā́i̯e/o-*) in Greek, the other stems based on Gk. *op-* < $*h_3k^u_\wedge$ are semantically closer to *horáō* than to *óssomai*.

patéomai 'taste, eat' $*ph_2$-*t-*

Lit.: GEW: II, 480, DELG: 863, van de Laar (2000: 240), Beekes (2010: 1157).

Aor. 1sg. *pasámēn*, 3pl. *pásanto*, inf. *pásasthai*; ptcp. *passámenos*, inf. *pássasthai*

Perf. 1sg.pluperf. *pepásmēn*

The handbooks mostly assume a connection with $*peh_2$ 'protect' (cp. Hitt. ***paḫš-***), the formation could be ultimately denominal to a nominal stem $*ph_2$-*t(o)-* → $*ph_2$-*t-éi̯e/o-*; the *s*-aorist has taken over the root vocalism of the present stem. This verb takes both accusative

and (partitive) genitive objects; the middle inflection could be due to influence by the semantically related verb *geúomai*, since verbs with this meaning usually take active morphology in Greek (cp. 6.3.3).

D.IV Denominal and deadjectival deponents

Present	Aorist	Meaning	Base
aitiáomai		'accuse, blame'	*aítios* 'responsible'
akéomai (ex-)		'heal, repair'	*ákos* 'cure'
gounázomai, *gounóomai*		'implore'	*gónu* 'knee'
ergázomai	*eirgáxeto*	'work'	*érgon* 'work'
[lōbáomai]	2pl. *lōbḗsasthe*	'outrage, mistreat'	*lṓbē* 'outrage'
manteúomai	*manteúsato*	'prophesy'	*mántis* 'prophet'
mētíomai	3pl. *emētísanto*	'devise'	*mêtis* 'wisdom, skill'
mūthéomai (apo-)	*mūthḗsato*	'relate, tell'	*mũthos* 'speech, tale'
odűromai	ptcp. *odurámenos*	'lament, bewail'	*odúnē* 'pain'
oinízomai		'procure wine'	*oĩnos* 'wine'
dia-skopiáomai		'spy out'	*skopiá* 'look-out place'
tekmaíromai	*tekmḗrato*	'assign, ordain'	*tékmar* 'mark, sign'
[tektaínomai]	*tektḗnato*	'do carpentry'	*téktōn* 'carpenter'
kharízomai	opt. *kharísaito*	'bestow, gratify'	*kháris* 'grace, favor'

E. Latin

E.I Introduction

The following list of Old Latin deponents is based on Flobert (1975). The focus is on Plautus, forms that are found outside of Plautus (e.g., Ennius, Naevius, etc.) are specifically indicated. As before, only syntactially passive forms are listed as "pass.". I depart from previous practise here and list compound verbs with preverbs as separate subentries of the main verb.

E.II Latin deponents

apīscor 'reach, attain, seize' $*h_1ep$-

Lit.: LIV^2: 237, LEW: I, 57f., DELL: 39f. (*apioō*), Hofmann (1910: 12, 32, 40), Flobert (1975: 60f.), Meiser (2003: 197f.), De Vaan (2008: 47).

Pres.	3sg. *apiscitur* (pass.)
Perf.	*aptus sum*
Pass.	3sg. *apiscitur*
Non-fin.	Inf. *apisci*

Unextended $*ap/*\bar{e}p$ is found in OLat. *apiō* 'bind together, fasten' and *co-epiō*, *co-ĕ̄pī* 'begin' (cp. Vine 2012: 9, Leumann 1977: 119). The perf.ptcp. *aptus* may originally belong to $*h_2ep$ 'fit' (so LIV, loc.cit.), but is synchronically used as perfect participle of *apīscor*.

The only present stem form in Plautus is actually used as passive (i.e., non-deponent):

Plautus, *Trinummus* 2.2:

Non aetate, verum ingenio apiscitur sapientia
NEG age.ABL but character.ABL attain.3SG.PRES.PASS wisdom.NOM
"Not through age, but through one's character is wisdom attained."

Hofmann (1910: 12, 32) and DELL loc.cit. posit a backformed active $*apīscō$ based on these passive readings. While we do not find formally and functionally active forms of this

verb at this stage of Latin, this nevertheless seems warranted given that we we find formally active *indipīscō* (see below). This suggests that there was some pressure to turn this verb into an alternating verb early on, starting from the non-finite formations.

- ***adipīscor*** 'arrive at, reach, obtain' **ad-ap-*

  Lit.: See *apīscor*.

Non-fin.	Ger. *adipiscendus*, inf. *adipiscier*, fut.ptcp. *adepturus*

- ***indipīscor*** 'seize' **end(o)-ap*

  Lit.: See *apīscor*.

Pres.	1sg. *indipiscor*, 1sg.subj. *indipiscar* (+gen.),
Perf.	*indeptus est*
Non-fin.	Perf.ptcp. *indeptus*, inf. *indipisci*
Act.	2sg.pres. *indipīsces*, 3sg.pres. *indipīscet*

  Hofmann (loc.cit.) suspects that the active forms (Plaut., *As.* 2.2 and *Aul.* 4.10) are due to metrical requirements.

- ***redipīscor*** 'recover' (hapax)

  Lit.: See *apīscor*.

Non-fin.	Inf. *redipisci*

aspernor 'reject, spurn' **sp^{h}er-n(e)-H-*

Lit.: LIV^2: 585f., LEW: II, 572f., DELL: 641 (*spernō*), Flobert (1975: 50), Meiser (1998: 187), De Vaan (2008: 579f.).

Pres.	3sg. *aspernātur*, 2sg.subj. *aspernēris*
Non-fin.	Inf. *aspernārī*

Intensive/durative of *spernō* 'push away, reject'.

caluor 'lie, deceive' *$*k/\hat{k}elh_1$*

Lit.: LIV^2: 349f., LEW: I, 143, Hofmann (1910: 33), Flobert (1975: 44), De Vaan (2008: 85).

Pres. 3sg. *caluitur*

Hapax in Plautus and rare in later texts, but included here because it also occurs once in the Twelve Tables (itr., *Tab.* I,2, Flach 2004: 38ff.).

com-minīscor 'imagine, invent' *$*men$-$\bar{i}$-$s\hat{k}e/o$-*

Lit.: LIV^2: 435f., DELL: 395 (*meminī*), 397 (*minīscor*), LEW: II, 65ff., Flobert (1975: 61), Klingenschmitt (1982: 73-74, fn. 17), De Vaan (2008: 371f.)

Pres. 1sg. *comminīscor*, 2sg. *comminīscere*, 1sg.subj. *comminīscar*

Perf. 3sg. *commentust* (< *commentus est*), *commenta est*

Pass. *commentum [est]* 'it was devised'

Non-fin. Perf.ptcp. *commentus, -a, -um*, inf. *comminīsci*

°*minīscor* presumably goes back to the *$-s\hat{k}e/o$-extended stem *$mn̥$-$i\hat{e}/\acute{o}$- seen in Ved. *mányate* 'thinks', Gk. *maínomai* 'rage', OIr. *-mainethar* 'believes', etc. Its perfect participle *commentus* may underlie the denominative formation *commentor* 'study, think about' (see E.III below). It displays consistent deponent behavior in Plautus' works, with the exception of the following passage, in which the perfect participle has a passive reading:

Plautus, *Truculentus* 2.5:

edepol commentum male
EXCL devised.PART.PERF.NOM.SG.N deviously

"Truly, it was deviously devised."

- ***re-comminīscor*** 'recall, remember' (hapax)

  Pres. 1sg.subj. *recomminīscar*

cōnor 'attempt, try, undertake' (inf.) *$kenh_1$*

Lit.: LIV^2: 352, LEW: I, 262, DELL: 138, Flobert (1975: 51), Vine (1998: 690, fn. 21), De Vaan (2008: 130f.).

Pres. 2sg. *cōnāre*

Perf. *cōnātus sum*

Non-fin. Perf.ptcp. *cōnātus*, inf. *cōnāri*

The five instances of this verb in Plautus are absolute or constructed with the infinitive, but I include this verb here because it is later also attested with accusative objects. The participle (acc.pl.n.) *cōnāta* in *Merc.* 39 has a passive reading (Hofmann 1910: 16).

As for the etymology, LIV^2: 352 posits a *$\underset{\frown}{i}e/o$*-stem with R($\bar{o}$)-grade, of the type Lat. *sōpīre* 'put to sleep' < *$s\underset{\frown}{u}\acute{o}p$-$\underset{\frown}{i}e/o$-, Gk. *pōléomai* 'go up and down' < *$k^{\mathrm{u}}\acute{o}lh_1$-$\underset{\frown}{i}e/o$-. Vine (1998), on the other hand, suggests that this verb could be an old denominative to a feminine adjectival abstract *$k\acute{o}n$-eh_2 ('freshness', cp. Gk. *kainós* 'fresh'), but concedes that this derivational basis is not attested anywhere. Given that Weiss (To appear) argues convincingly that Lat. *sōpīre* is better explained as a backformation from the **to*-adjective *sōpītus*, itself a "decasuative" derivative *$s\underset{\frown}{u}\bar{o}p$-$ih_1$-*to*- from the instrumental of a (lengthened grade) acrostatic *i*-abstract *$s\underset{\frown}{u}\bar{o}pi$- 'sleep' (see Nussbaum (1996), (1998), Vine (1999b), and Widmer (2005) on de-instrumental stems in general), a parallel denominative origin of *cōnor* is nevertheless more likely, especially since the R($\bar{o}$)-$\underset{\frown}{i}e/o$-"causative-iterative" class posited by LIV^2 is not universally accepted.

dēspicor 'despise, disdain' *$sp\acute{e}\hat{k}$-$\underset{\frown}{i}e/o$-*

Lit.: LIV^2: 575f., LEW: II, 570f., DELL: 639ff. (*$speci\bar{o}$), Flobert (1975: 51), De Vaan (2008: 578f.).

Pres.	3sg. *dēspicātur*
Pass.	Perf.ptcp.f.sg. *dēspicāta* (1x)
Non-fin.	Perf.ptcp. *dēspicāta* (1x; pass)

See ***cōnspicor*** and ***suspicor***. The only attestation of the perfect participle in Plautus has a passive reading (cp. Hofmann 1910: 14):

Plautus, *Casina* 189:

Vir	me	habet	pessumis	despicatam	modis
husband.NOM	me.ACC	has	worst.ABL.PL	disdained.PERF.PTCP.ACC.F	manner.ABL.PL

"My husband holds me in disdain in the worst manner" (lit. "has/holds me$_i$ disdained$_i$")[18]

fateor 'confess, acknowledge' $*b^{h}h_{2}$-*t*-

Lit.: LEW: I, 462, DELL: 219, Flobert (1975: 54), Leumann (1977: 555), De Vaan (2008: 204).

Pres.	1sg. *fateor*, 2sg. *fatēre*, 3sg. *fatētur*, 1sg.subj. *fatear*
Perf.	3sg.m. *fassust*, 3sg.f. *fassa est*
Fut.	1sg. *fatēbor*
Non-fin.	Perf.ptcp. *fassus, -a, -um*, inf. *fatērī*

Descriptively, this verb goes back to an $*e\underset{\frown}{i}e/o$- (or $*eh_1\text{-}\underset{\frown}{i}e/o$-, cp. Jasanoff 2004) stem made to the *t*-extended version of the root $*b^{h}eh_{2}$ 'speak' (Lat. *fārī*, Gk. *phēmí*, etc.), which could either be a root noun *(-)*$b^{h}h_{2}$-*t*- or maybe the *to*-participle $*b^{h}h_{2}$-*to*- (Gk. *phatós*). As for the stem formation, LEW (loc.cit.) cite Gk. ***patéomai*** 'taste, eat' < $*ph_{2}$-*t*-$e\underset{\frown}{i}e/o$- for comparison (cf. also Gk. ***datéomai*** 'divide up').

[18] Although this construction later gave the periphrastic HAVE+PPP perfect in the Romance languages, it should not be translated as such here because the participle still agrees with the object, and not the subject.

- ***cōnfiteor*** 'acknowledge, grant, concede'

  Lit.: See *fateor*.

Pres.	1sg. *cōnfiteor*, 2sg. *cōnfitērе*, 3sg. *cōnfitētur*
Perf.	3sg.m. *confessus est*, 3sg.subj.m. *confessus sit*
Non-fin.	Perf.ptcp. *confessus, -a, -um*, inf. *cōnfitērī*, inf. *cōnfitērier*

  The earliest attestation of the participle *cōnfessus* in the Twelve Tables (*Duodecim tabularum leges* = *Tab.*) has a passive reading (Hofmann 1910: 13, Flach 2004: 70ff.):

  Tab. III:

aeris	confessi	rebus=que	iure	iudicatis
payments.DAT	acknowledged.GEN	case.DAT.PL=and	adjudged.DAT.PL	court.ABL
triginta	dies	iusti	sunto.	
30	days	right.GEN	be.3PL.IPV	

  "For the payment of an acknowledged [debt] and for a case adjudged by a court there shall be 30 days of legal respite."

- ***profiteor*** 'declare, confess'

  Lit.: See *fateor*.

Pres.	3sg. *profitētur*
Non-fin.	Inf. *profitērī*

  Attested twice in Plautus, both times intransitive.

for 'speak, say' $*b^heh_2$

Lit.: LIV^2: 69f., LEW: I, 525f., DELL: 245f., Flobert (1975: 51f.), De Vaan (2008: 231).

Pres.	3sg. *fātur* (Enn.)
Non-fin.	Pres.ptcp. *fāns*, ger. *fandus* "to be spoken", inf. *fārī* (Enn.)

This paradigm is famously defective in its finite forms, only the 3sg. *fātur* and the 3pl. *fantur* actually occur. However, there can be no doubt that this verb was active and transitive, the first attestation of *fātur* (Ennius, *Ann.* 360, see Vahlen 1928: 64, Warmington 1935: 130f.) introduces direct speech and all the early instances of *effor* and *profor* (see below) are active. This also holds for the non-finite forms, which later switch to being passive (cp. DELL, loc.cit.).

- ***effor*** 'speak out, declare'

  Lit.: See *for*.

Pres.	3sg. *effātur* (Enn.)
Non-fin.	Perf.ptcp. *effātus* (<ecfatus>, Enn.), inf. *effārī* (<ecfari>, Enn.)

  The earliest attestation of the perfect participle is active and transitive (see Warmington 1935: 16f.):

  Ennius, *Ann.* I 47:

  haec effatus pater, germana, repente
  this.ACC declared.PERF.PTCP.NOM.SG.M father.NOM sister.VOC suddenly
  recessit
  withdraw.3SG.PERF.ACT

  "Having declared this, my sister, father suddenly withdrew."

- ***profor*** 'announce, declare, foretell'

  Lit.: See *for*.

Perf.	3sg.f. *profāta est* (Liv.Andr.)
Non-fin.	*profātus, -a*, (Enn., Liv.Andr.)

  The periphrastic perfect in Livius Andronicus patterns as expected in being syntacti-

cally active (see Warmington 1936: 28f., Livingston 2004: 7ff. on this passage):

Livius Andronicus, *Odissia* 10:

quando	dies	adveniet	quem	profata	Morta
when	day	come.3SG.FUT	which.ACC	foretoldPERF.PTCP.NOM.SG.F	Morta.NOM
est					
be.3SG.PRES					

"When the day comes which Morta has foretold ..."

fungor 'perform, carry out; enjoy' $*b^h e\underset{\frown}{u}g$

Lit.: LIV^2: 84f., LEW: I, 565f., DELL: 262, Flobert (1975: 45f.), De Vaan (2008: 250).

Pres. 3sg. *fungitur*, 2sg. subj. *fungāre*, 3sg.subj. *fungātur*

Non-fin. Inf. *fungī*, inf. *fungier*

While this verb takes accusative objects in the earlier stages of Latin, its later syntax and meaning resemble that of *fruor* 'enjoy' (+ abl.). However, Wackernagel 2009: 95f. (= Wackernagel 1920: I, 68) argues that the comparison with Skt. *bhuṅkté* 'enjoys' (+ acc. & instr.) shows that both the use with structural case (acc.) and inherent case (abl. or instr.) must be old.

hortor (*horior*) 'incite, encourage' $*\hat{g}^h er$

Lit.: LIV^2: 176f., LEW: I, 657 (*horior*), DELL: 299 (**horior*; *hortor*), Flobert (1975: 64), De Vaan (2008: 289 (*horior*)).

Pres. 1sg. *hortor*, 2sg. *hortāre*, 3sg. *hortātur* (1x unsyncopated *horitātur*, Enn.), 1pl. *hortāminī*, 3pl. *hortantur*, 1pl.subj. *hortēmur*; 3sg. *horitur* (Enn.)

Ipf. 3sg. *hortābātur*

Fut. 3sg. *hortābitur*

Non-fin. Inf. *hortārī*, inf. *hortarier*

Nom.Ag. *hortātor* 'inciter'

Commentators agree that *horior* (Enn., *Ann.* 432) ⇐ $*\hat{g}^{h}\underset{\circ}{r}\text{-}\underset{\frown}{ie}/o\text{-}$ (cp. Meiser 1998: 63) represents the older stem (which has formal cognates in, e.g., Ved. *háryati* 'likes, is happy about sth.' and Gk. *khaírō* 'rejoice', but note that the meaning does not match). This stem was then replaced by the "frequentative-intensive" (DELL, loc.cit.) *horitor*, which gave syncopated *hortor*. Neither stem has an old perfect.

- ***adhortor*** 'encourage'

  Lit.: See *hortor*.

  Pres. 3sg. *adhortātur*

- ***dehortor*** 'dissuade, discourage'

  Lit.: See *hortor*.

  Pres. 1sg. *dehortor*, 3sg. *dē mē hortātur* (Enn. *Ann.* 381)

  Non-fin. Inf. *dehortārī*

imitor 'imitate'

Lit.: LEW: I, 17 (*aemulus*); 689 (*imāgō*), DELL: 309 (*imāgō*), Flobert (1975: 64), De Vaan (2008: 298 (*imāgō*)).

Pres. 3sg. *imitātur*, 1sg.subj. *imiter*, 1pl.subj. *imitēmur*

Fut. 1sg. *imitābor*

Non-fin. Inf. *imitārī*, inf. *imitārier*, ger. *imitandum* (Enn.)

Act. 1sg.fut. *imitābō* (Liv. Andr., *Trag.* 1)

Possibly the intensive of an unattested verb **imor* (LEW: I, 17).

licitor 'offer, make a bid' (?)*leiḱ

Lit.: (LIV^2: 406 (*liceō*)), LEW: I, 797 (*liceō*)), DELL: 356 (*liceor*), Flobert (1975: 64), Nussbaum (1994), De Vaan (2008: 340).

Pres.	2sg.subj. *licitēre*, 3pl. *licitantur* (Enn.)

This rare and furthermore intransitive verb is included here because of its more common, transitive derivative *pollicitor*; *licitor* itself is an intensive formation to the likewise intransitive *liceor* 'make a bid' (cp. ***polliceor*** below).

- ***pollicitor*** 'promise' (< **por-lik-*)

  Lit.: See *licitor*.

Pres.	2sg.subj. *pollicitēre*
Fut.	1sg. *pollicitābor*
Non-fin.	Inf. *pollicitārī*, inf. *pollicitārier*

  Usually construed with the infinitive or absolutely, but one passage in Plautus has a direct object (*Mil.* 879).

loquor 'speak, say'

Lit.: LEW: I, 821, DELL: 366, Flobert (1975: 46), De Vaan (2008: 348f.).

Pres.	1sg. *loquor*, 2sg. *loquere* (ind./ipv.)/*loqueris*, 3sg. *loquitur*, 1pl. *loquimur*, 3pl. *locuntur*, 1sg.subj. *loquar*, 3sg.subj. *loquātur*, 1pl.subj. *loquāmur*, 3sg.subj. *loquātur*, 3pl.subj. *loquāntur*
Ipf.	1sg. *loquēbar*, 1sg.subj. *loquerer*, 3pl.subj. *loquerēntur*
Fut.	1sg. *loquar*, 3pl. *loquentur*
Perf.	1sg.f. *locūta sum*, 3sg.m. *locūtus est*, 3pl.m. *locūtī sunt*
Non-fin.	Pres.ptcp. *loquēns*, perf.ptcp. *locūtus, -a, -um*, inf. *loquī*, ger. *loquendus*, sup. *locūtū*

Loquor is the best-attested deponent in Plautus (259 instances, 104 with accusative objects according to Flobert, loc.cit.) and, like ***sequor*** 'follow' (178 instances), has a late and relatively rare perfect (8 instances, not counting the preverb compounds, cf. below); the perfect participle itself is modelled on the type *solūtus*, *volūtus*, etc. (cf. Flobert, De Vaan, loc.cit.).

- ***adloquor, alloquor*** 'speak to, address'

  Lit.: See *loquor*.

Pres.	1sg. *adloquor*, 2sg.ipv. *adloquere*, 1sg.subj. *adloquar* (*all-*)
Non-fin.	Inf. *adloquī* (*all-*)

- ***conloquor, colloquor*** 'talk to, converse with'

  Lit.: See *loquor*.

Pres.	3pl. *colloquontur*, 1sg.subj. *conloquar*, 3sg.subj. *conloquātur*
Fut.	1sg. *conloquar*
Perf.	2sg. *conlocūtū's*
Non-fin.	Perf.ptcp. *conlocūtūs*, Inf. *conloquī* (*coll-*)

- ***ēloquor*** 'speak out, declare'

  Lit.: See *loquor*.

Pres.	1sg. *ēloquor*, 3sg. *ēloquitur*, 2sg.ipv. *ēloquere*, 1pl.subj. *ēloquāmur*
Ipf.	3sg.subj. *ēloquerētur* (Enn.), 3pl.subj. *ēloquerēntur*
Fut.	1sg. *ēloquar*
Perf.	1sg.m. *ēlocūtus sum*, 3sg.m. *ēlocūtust*, 3sg.f. *ēlocūta est*, 1sg.pluperf.subj.m. *ēlocūtus essem*
Non-fin.	Perf.ptcp. *ēlocūtus, -a, -um*, inf. *ēloquī*

- ***prōloquor*** 'speak out, declare'

  Lit.: See *loquor*.

Pres.	1sg. *proloquor*
Fut.	1sg. *proloquar*
Perf.	3sg.m. *prolocūtus est*
Non-fin.	Perf.ptcp. *prolocūtus, -a, -um*, inf. *proloquī*

- ***transloquor, trāloquor*** 'recount, talk over' (hapax)

  Lit.: See *loquor*.

Non-fin.	Inf. *trāloquī* (*trans-*)

Itr./oblique objects: *obloquor* 'cut off', *praeloquor* 'speak first'.

meditor 'reflect on, muse about' 1. **med*

Lit.: (LIV^2: 423 (*medeor*)), LEW: II, 55f., DELL: 392f., Flobert (1975: 64f.), De Vaan (2008: 368).

Pres.	3sg. *meditātur*, 1pl.subj. *meditēmur*
Ipf.	1sg. *meditābar*
Fut.	1sg. *meditābor*
Perf.	1sg.m. *meditātus sum*, 1pl.m. *meditātī sumus*, 3pl.m. *meditātī sunt*
Pass.	3pl.perf.m. *meditātī sunt*, perf.ptcp.acc.sg.f. *meditātam* "thought out, planned, prepared"
Non-fin.	*meditātus, -a, -um*, inf. *meditārī*

This verb is generally considered an iterative-intensive formation to *medeor* 'heal, cure', probably from an earlier meaning 'take care of' (cp. Gk. ***médomai*** 'be mindful of'). While the finite forms are active and usually transitive, the perfect participle has a passive reading in its attributive use (see Hofmann 1910: 14 for more passages), e.g.:

Plautus, *Miles gloriosus* 903:

Probe meditatam utramque duco
thoroughly prepared.PERF.PTCP.ACC.F each.ACC.F lead.1SG.PRES

"I lead each of them here thoroughly prepared."

However, this passive reading of the perfect participle is not restricted to non-finite contexts, as the following passive instance of a 3pl. perfect shows:

Plautus, *Pseudolus* 941:

meditati sunt mihi doli docte
preparedPERF.PTCP.NOM.PL be.3PL.PRES me.DAT plans.NOM.PL cleverly

"My plans are cleverly prepared"

Nevertheless, the third person of the perfect can also have the expected active reading, e.g.:

Plautus, *Persa* 4,2 465-6:

Tragici et comici numquam aeque sunt meditati
tragedians and comedians never equally be.3PL.PRES preparedPERF.PTCP.NOM.PL

"Tragedians and comedians have never prepared themselves quite as well."

Note that the context makes it clear that the "actors" in this passage have prepared themselves (= have reflected on their roles), in contrast to *Mil.* 903 cited above, where they have received instructions from somebody else. The passive reading of the participle also underlies the adverb *meditātē* 'in a well-prepared manner, thoroughly'.

minitor 'threaten'

Lit.: See *minor*; Flobert (1975: 65).

Pres.	2sg. *minitāre/minitāris*, 3sg. *minitātur*, 2pl. *minitāminī*, 1sg.subj. *miniter*, 3sg.subj. *minitētur*
Fut.	1sg. *minitābor*
Non-fin.	Inf. *minitārī*, *minitārier*
Act.	2sg.pres. *minitās* (also Liv. Andr.), 2sg.ipf. *minitābas*

Intensive of ***minor*** 'be threatening'; see Hofmann (1910: 41) for a collection of the passages with formally active forms.

minor 'jut forth, be threatening, threaten sbdy. (dat.) with sth. (acc)'

Lit.: LEW: II, 90 (*minae*), DELL: 403f. (*minae*), Hofmann (1910: 41), Flobert (1975: 79), De Vaan (2008: 380 (*minae*)).

Pres.	2sg. *mināre*, 3sg. *minātur*
Perf.	3sg.m. *minātus est*
Non-fin.	Perf.ptcp. *minātus, -a, -um*

This verb is a denominative of *minae* 'threats' and usually takes only dative objects, but is included here because of its derivative *minitor* (see above), which is more common already in Plautus (also in *comminor* 'threaten' (1x), *ēminor* 'chase away with threats' (1x), *interminor* 'interrupt with threats' (4x)).

nancīscor 'reach, obtain, get' $*h_2nek̂$

Lit.: LIV^2: 282f., LEW: II, 141f. (*nanciō*), DELL: 428f. (*nancior, nanciō*), Flobert (1975: 62), García Ramón (1999a: 62ff.), De Vaan (2008: 399f.).

Pres.	3pl. *nancīscuntur* (Enn.)

Perf.	2sg.m./f. *nactus/nancta es*, 3sg.m. *nanctus est*, 3pl.m. *nanctī sunt*, 1sg.pluperf.m. *nanctus essem*, 2sg.fut.m. *nactus eris*
Non-fin.	Perf.ptcp. *na(n)ctus, -a, -um*, inf. *nancīscī* inf. *nancīscier*

LIV^2 suggests a blend between an old nasal infix present of *$h_2nek̂$ and a *$i̯e/o$-present to account for the Proto-Italic stem *$nank$-$ī$- > Lat. *nancior* (cf. García Ramón 1999a for a detailed discussion of the phonological and semantic problems), which in Latin was extended to *$nank$-$ī$-sk-. *Nancior* 'attain' (also *renancior* and act. *nanciō*) is sparsely attested, e.g., Festus 166, 29: *nancitor in XII (inc. 1) nactus erit, praenderit.*, etc. (Lindsay 1913: 166, see also Hofmann 1910: 42f., Flobert 1975: 59, García Ramón 1999a: 63, fn. 67).

opperior 'wait, await, expect'

Lit.: LEW: II, 288f. (*perīculum*), DELL: 498f. (*perītus*), Flobert (1975: 60), De Vaan (2008: 445f. (*pariō*)).

Pres.	2sg.ipv. *opperīre*, 3sg. *opperītur*, 1sg.subj. *opperiar*, 2sg.subj. *opperiāre*, 1pl.subj. *opperiāmur*
Fut.	1sg. *opperiar*
Perf.	1sg.m. *opperītus sum*
Non-fin.	Perf.ptcp. *opperītus, -a, -um* (later: *oppertus*)

Opperior can be transitive or instransitive. The simplex *perior* 'experience, undergo' is attested only once in Plautus:

Plautus, *Persa* 270-1:

nil iam mihi novi offerre potest, quin sim
nothing now me.DAT new.GEN bring.INF can.3SG REL.NEG be.1SG.SUBJ
peritus
experienced.PERF.PTCP.NOM.SG.M

"Nothing new can he bring before me now that I have not already experienced."

Perior was replaced by *experior* 'experience' early on (53x in Plautus); I exclude this verb here because it is an experiencer verb.[19]

The etymology is contested; LEW and DELL loc.cit. suggest a connection with 1. **per* 'cross over, traverse' (Ved. *píparti* 'helps across', Gk. *peírō* 'pierce', *peîra* 'attempt'); De Vaan (2008: 445) groups *perior* with *pariō* 'give birth; create; acquire' < **perh₃*.

polliceor 'promise, offer' (?)**leiḱ*

Lit.: (LIV^2: 406 (*liceō*)), LEW: I, 797 (*liceō*)), DELL: 356 (*liceor*), Flobert (1975: 64), Nussbaum (1994), De Vaan (2008: 340).

Pres.	1sg. *polliceor*, 2sg. *pollicēre*, 3sg. *pollicētur*, 1pl. *pollicēmur*, 3pl. *pollicentur* (Enn.), 1sg.subj. *pollicear*
Ipf.	1sg.subj. *pollicērer*
Perf.	3sg.m. *pollicitust*
Non-fin.	Perf.ptcp. *pollicitus, -a, -um*, inf. *pollicērī*

Usually transitive or construed with an infinitive, but Nussbaum (1994) argues in detail that the original use of *(pol)liceor* was intransitive (cp. intransitive *licēminī* in Plautus, *Stich.* 221 and *pollicitust* 'he made a bid' (itr.) in *Merc.* 439); see also *licitor* above.

queror 'complain, lament, bewail sth.' **ḱ̂ues*

Lit.: LIV^2: 341, LEW: II, 403f., DELL: 555f., Flobert (1975: 48), De Vaan (2008: 507).

Pres.	1sg. *queror*, 2sg.ipv. *querere*, 3sg. *queritur*
Non-fin.	Inf. *querī*, sup. *questum*

[19] In fact, *the* experiencer verb.

- ***conqueror*** 'lament, deplore sth.'

  Lit.: See *queror*.

Pres.	1sg. *conqueror*, 3sg. *conqueritur*

sector 'follow, pursue' 1. $*sek^{u}$

Lit.: LIV^{2}: 525f., LEW: II, 519f. (*sequor*)), DELL: 616 (*sequor*), Flobert (1975: 65f.), De Vaan (2008: 555f. (*sequor*)).

Pres.	1sg. *sector*
Perf.	1sg.m. *sectātus sim*, 3sg.subj.m. *sectātus sit*
Non-fin.	Perf.ptcp. *sectātus, -a, -um*, inf. *sectārier*/*sectārī*

Intensive of *sequor*.

- ***adsector*** 'attend, follow'

  Lit.: See *sector*.

  Attested once with a passive reading in Ennius (*Inc.* 8, cp. Hofmann 1910: 32, Warmington 1935: 444, Flobert 1975: 65), *adsectari se omnes cupiunt* "all men wish to be followed".

- ***cōnsector*** 'attend, pursue'

  Lit.: See *sector*.

Pres.	2sg. *cōnsectāre*, 3sg. *cōnsectātur*, 3pl. *cōnsectantur*
Non-fin.	Inf. *cōnsectarier*

  Occasionally has used as passive in Plautus (Hofmann 1910: 33).

- ***īnsector*** 'pursue'

  Lit.: See *sector*.

Pres.	3sg. *īnsectātur*

Ipf.	1sg.subj. *īnsectārer*
Perf.	3sg.m. *īnsectātus est*
Non-fin.	Perf.ptcp. *īnsectātus, -a, -um*
Active	3sg.fut. *īnsectābit* (2x)

- ***persector*** 'follow'

  Lit.: See *sector*.

  Non-fin. Inf. *persectārī*

sequor 'follow' 1. $*sek^{u}$

Lit.: LIV^{2}: 525f., LEW: II, 519f., DELL: 616, Flobert (1975: 48f.), De Vaan (2008: 555f.).

Pres.	1sg. *sequor*, 2sg.ind./ipv. *sequere*, 3sg. *sequitur*, 3pl. *secuntur*, 2pl.ipv. *sequiminī*, 1sg.subj. *sequar*, 3sg.subj. *sequātur*
Non-fin.	Inf. *sequī*, ger. *secundus, -a, -um*

Construed absolutely or with accusative objects; the perfect participle *secūtus* (see the compound forms below), like that of ***loquor***, is recent and modeled on, e.g., *solūtus*, *volūtus*, etc.

- ***adsequor*** 'pursue, follow closely'

  Lit.: See *sequor*.

Pres.	3sg. *adsequitur*, 2sg.ipv. *adsequere*
Fut.	1sg. *adsequar*

- ***cōnsequor*** 'accompany, pursue'

  Lit.: See *sequor*.

Pres.	3sg. *cōnsequitur*, 2sg.ipv. *cōnsequere*, 2pl.ipv. *cōnseqiminī*, 3sg.subj. *cōnsequātur*, 1pl.subj. *cōnsequāmur*

Perf.	3sg.m. *cōnsecūtust*
Non-fin.	*cōnsequī*

- ***exsequor*** 'follow through, carry out'

  Lit.: See *sequor*.

Pres.	1sg. *exsequor*, 3sg. *exsequitur*, 3pl. *exsequontur*, 1sg.subj. *exsequar*, 2sg.subj. *exsequāre*, 1pl.subj. *exsequāmur*
Fut.	1sg. *exequar*
Perf.	1sg.f. *exsecūta sum*
Non-fin.	*ex(s)equī*

- ***obsequor*** 'yield to, obey' (+dat., acc.)

  Lit.: See *sequor*.

Pres.	1sg. *obsequor*, 3sg. *obsequitur*, 2sg.ipv. *obsequere*, 1sg.subj. *obsequar*, 2sg.subj. *obsequāre*
Ipf.	3pl. *obsequebantur* (Enn.)
Perf.	3sg.f. *obsecūtast*
Non-fin.	Pres.ptcp. *opsequēns*, Perf.ptcp. *obsecūtus, -a, -um*, inf. *obsequī* (Enn.)

- ***persequor*** 'follow, pursue'

  Lit.: See *sequor*.

Pres.	1sg. *persequor*, 1pl. *persequimur*, 1sg.subj. *persequar*, 2sg.subj. *persequātur*, 1pl.subj. *persequāmur*
Non-fin.	Pres.ptcp. *persequēns*, Perf.ptcp. *persecūtus, -a, -um*, inf. *persequī*

- ***subsequor*** 'follow closely'

  Lit.: See *sequor*.

Pres.	1sg. *subsequor*, 3sg. *subsequitur*, 2sg.ipv. *subsequere*
Fut.	*subsequar*

sōlor 'console, comfort' *$*selh_2$*

Lit.: LEW: II, 556f., DELL: 633f., Flobert (1975: 53), Schrijver (1991: 126), Vine (1998: 690f., fn. 21), De Vaan (2008: 572).

Pres.	3sg. *solātur*, sg.subj. *solētur*

Sōlor is usually connected with Gk. ***hiláskomai*** 'appease', *hílēmi* 'am gracious', etc., and thus with *$*selh_2$* (LIV^2: 530). Vine (loc.cit.) suggests that the Latin verb goes back to a denominative derivative from a lengthened grade *$*eh_2$*-stem, thus *$*sōlh_2$-eh_2* 'consolation' → *$*sōlh_2$-eh_2-i̯e/o-* 'console' (cf. Gk. *lóbē* 'outrage' → *lōbáomai* 'mistreat, insult').

- ***cōnsolor*** 'console, comfort'

  Lit.: See *solor*.

Pres.	3sg. *cōnsolātur*, 1sg.subj. *consoler*
Non-fin.	Ger. *cōnsolāndus*, inf. *cōnsolārī*

suspicor 'suspect' (+inf., acc. (rare)) *$*-spék̂-i̯e/o-$*

Lit.: LIV^2: 575f., LEW: II, 570f., DELL: 639ff. (*$*speciō$*), Flobert (1975: 51), De Vaan (2008: 578f.).

Pres.	1sg. *suspicor*,3sg. *suspicātur*, 2pl. *supicāminī*, 1sg.subj. *suspicer*, 3sg.subj. *suspicētur*, 3pl.subj. *suspicēntur*
Ipf.	1sg. *suspicābar*
Fut.	3sg. *suspicābitur*
Perf.	2sg.m. *supicātus es*

Non-fin.	Inf. *suspicārier*, *supicārī*
Act.	2sg.subj. *suspicēs* (Plaut., *Cas.* 394)

See ***cōnspicor*** and ***dēspicor***.

tueor, tuor 'protect, watch' ?*$te\underset{\frown}{u}H$

Lit.: LIV^2: 639, LEW: II, 713f., DELL: 706, Flobert (1975: 55f.), Leumann (1977: 544), De Vaan (2008: 632f.).

Pres.	1sg. *tueor*/*tuor* (Enn.)
Non-fin.	(Perf.ptcp. *tūtus, -a, -um*), ger. *tuendus, -a, um* (Plaut.), inf. *tuērī* (Enn.)
Nom.Ag.	*tūtor*

Plautus and Ennius use both *tueor, -ēris* and *tuor, -eris*. The latter seems to be the older form, it acts as a metrically convenient variant in Plautus and Ennius and does not occur in prose (DELL, loc.cit.). The easiest assumption is that its preform was either a zero grade thematic middle *tuH-e/o-. The corresponding perfect participle *tūtus* < *tuH-to- does not make a periphrastic perfect until Classical Latin and is used only as an adjective 'safe; careful' in Plautus (cp. the adverbs *tūtō*, *tūtē* 'carefully, safely'; Hofmann 1910: 16 interprets these instances as passive uses of the perfect participle). De Vaan (loc.cit.) suggests that the variant *tueor* reflects a causative *$touH$-$e\underset{\frown}{i}e/o$-; this could have taken over the zero grade from *tuor*. Alternatively, a stem *tuH-$eh_1\underset{\frown}{i}e/o$- would also have given *tueor* (see Jasanoff 2004 on the "stative" suffix *-eh_1-$\underset{\frown}{i}e/o$-, cp. also Harðarson 1998 and LIV^2 (loc.cit.) for a different reconstruction of the suffix). Given that there are no clear cognates to this root outside of Latin (the connection with *$te\underset{\frown}{u}h_2$ 'be strong' suggested by De Vaan 2008 (loc.cit.) is semantically unconvincing) and the two verbs do not differ in meaning, it is easiest to assume that *tueor* was in fact an inner-Latin remodelling of *tuor*.

- ***contuor*** 'observe, survey'

  Lit.: See *tueor*.

Pres.	1sg. *contuor*
Non-fin.	Inf. *contuī*

- ***intueor, intuor*** 'look closely at'

  Lit.: See *tueor*.

Pres.	1sg. *intueor*/*intuor*, 3sg. *intuētur*/*intuitur*, *indotuētur* (Enn.), 3pl. *intuentur*

- ***obtueor, obtuor*** 'look at, see'

  Lit.: See *tueor*.

Pres.	2sg. *optuere*; 3sg. *obtuētur*
Non-fin.	Inf. *optuērier*

tūtor 'protect' ?**teu̯H*

Lit.: LIV^2: 639, LEW: II, 713f. (*tueor*), DELL: 706 (*tueor*), Flobert (1975: 66), De Vaan (2008: 632f. *tueor*).

Pres.	3pl. *tūtantur* (pass.), 2sg.subj. *tūtēre*, 3sg.subj. *tūtētur*, 1pl.subj. *tūtēminī*
Ipf.	3pl.subj. *tūtārēntur*
Fut.	1sg. *tūtābor*
Perf.	3sg.m. *tūtātust*
Pass.	3pl.pres. *tūtantur*
Non-fin.	Perf.ptcp. *tūtātus, -a, -um*, inf. *tūtārī*, *tūtārier*
Act.	2pl.subj. *tūtētis* (Plaut., *Merc.* 865), 3pl. *tūtant* (Naev., *Trag.* 17), 2sg.ipv. *tūta* (Pacuv., *Trag.* 288)

Tūtor is the repetitive/frequentative of ***tueor, tuor***, based on the perfect participle *tūtus*. It occurs once in Plautus with a passive reading (cp. Hofmann 1910: 34):

Plautus, *Amphitruo* 649-51:

virtus	omnibus	rebus	anteit	profecto:	libertas	salus	
virtue.NOM	all.DAT	things.DAT	precede.3SG.PRES	truly	liberty.NOM	safety.NOM	
vita	res	et	parentes,	patria	et	prognati	
life.NOM	propery.NOM	and	parents.NOM	country.NOM	and	offspring.NOM	
tutantur,			servantur				
watch.over.3PL.PRES.PASS			protect.3PL.PRES.PASS.				

"Virtue truly precedes all other things: Liberty, safety, life, property and parents, (one's) country and offspring are watched over and protected (by it)."

It is possible that this use is oppositional to the marginal, formally active *tūtō* attested in Plautus, Naevius, and Pacuvius (cf. Hofmann 1910: 45).

ulcīscor 'take revenge on, punish; avenge' $*h_2elk$

Lit.: LIV^2: 264, LEW: II, 810f., DELL: 743, Flobert (1975: 63), Schrijver (1991: 70), De Vaan (2008: 636f.).

Pres.	3sg. *ulciscītur*, 1sg.subj. *ulcīscar*, 2sg.subj. *ulcīscāre*
Ipf.	1sg.subj. *ulcīscerer*
Fut.	1sg. *ulcīscar*
Perf.	1sg.m. *ultus sum*, 1sg.fut.m. *ultus fuerō*
Non-fin.	Perf.ptcp. *ultus, -a, -um*, ger. *ulcīscendus, -a, -um* (Pacuv.), *ulcīscī*
Nom. Ag.	*ultor* (< **ulc-tor*) 'avenger' (Acc.+)
Act.	1sg.ipf.subj. *ulcīscerem* (Enn.); *ullō* 'will have avenged' (Acc.)

The etymology suggested by LIV^2, $*h_2\underset{\circ}{l}k$-$s\hat{k}e/o$-, presupposes a development $\#h_2\underset{\circ}{l}C > \#olC > \#ulC$, but the evidence collected by Schrijver (1991: 66f.) suggests that the outcome should be $\#alC$ (see also Meiser 1998: 106). De Vaan (2008: 637) suggests a preform

*h_3olh_1 ('perish', LIV^2: 298. cf. Gk. perf. *ólōla* 'I am lost') > *$ol{+}k$, with the late addition of what is presumably the same *-k-* as in Gk. *olékō* 'destroy'. However, a preform *$h_3\underset{\circ}{l}h_1$-*k*- would also have given both the Greek and the Latin stem form; this would then have been extended by *-*īsk*- in Latin.

vēnor 'chase' *$\underset{\frown}{u}enH$ (?)

Lit.: LIV^2: 682, LEW: II, 749f., DELL: 720f., Meillet (1896), Flobert (1975: 53), De Vaan (2008: 662).

Pres.	1sg. *vēnor* (Enn., pass.), 2sg.ipv. *vēnāre*
Pass.	1sg. *vēnor* (Enn.)
Non-fin.	Inf. *vēnārī*
Nom. Ag.	*vēnātor* 'hunter'

De Vaan (loc.cit.) suggests a denominative origin of this verb (from a lengthened grade feminine abstract *$\underset{\frown}{u}ēnā$- 'hunt'?). It is usually thought to belong with *$\underset{\frown}{u}enH$ 'become fond of, desire', cf. Ved. *vánate* 'loves' (thus Meillet, LEW, De Vaan loc.cit.).

- ***pervēnor*** 'chase through(out)'

  Lit.: See *vēnor*. Hapax in Plautus (inf. *pervēnārier*, *Merc.* 805).

E.III Unclear cases

The following middles are transitive, but should be classified as canonical because of their non-agentive behavior.

cōnspicor 'see, perceive' *$\text{-}spé\hat{k}\text{-}\underset{\frown}{i}e/o$-

Lit.: LIV^2: 575f., LEW: II, 570f., DELL: 639f. (**speciō*), Flobert (1975: 51), De Vaan (2008: 578f.).

Pres.	1sg. *cōnspicor*, 3sg.subj. *cōnspicētur*

Perf. 1sg. *cōnspicātus sum*, 3sg.m. *cōnspicātust*, 3sg.f. *cōnspicātast*, 2sg.subj. *cōnspicātus sīs*

Non-fin. Perf.ptcp. *cōnspicātus*, inf. *cōnspicāri*

The simplex *speciō* 'see' is active (but note that its Greek cognate *sképtomai* is deponent), and Plautus also has a formally active *cōnspiciō* with the same meaning as the deponent. See ***dēspicor*** and ***suspicor*** (I give separate entries for these because there is no simplex deponent).

frūnīscor 'enjoy' [?*$b^h reu\underset{\frown}{u}Hg/\hat{g}$]

Lit.: LIV^2: 96 (*fruor*) , LEW: I, 552, DELL: 256f. (*fruor*) , Flobert (1975: 44f., 61), De Vaan (2008: 244f. (*fruor*)).

Non-fin. *frūnīscī*

Hapax in Plautus, but included here because of its opposition to its derivational basis *fruor* 'enjoy, make use of'. While the latter is regularly construed with the ablative (as in Plaut., *As.* 918), *frūnīscor*, though rarer, generally occurs with the accusative (a parallel between deponent behavior and the *$s\hat{k}e/o$-suffix is found in Hittite). The phonological development suggested by LEW and De Vaan, loc.cit, **frūg-nV-sk-* is problematic given that word-medial *-gn-* should be preserved (cp. Weiss 2009: 169).

ūtor 'use, enjoy' (+abl., acc. (rare)) ?*$h_3e\underset{\frown}{i}t$

Lit.: LIV^2: 297, LEW: II, 847ff., DELL: 757f., Flobert (1975: 49f.), De Vaan (2008: 647f.).

Pres. 1sg. *ūtor*, 2sg. *ūteris*, 2sg.ipv. *ūtere*, 3sg. *ūtitur*, 1pl. *ūtimur*, 3pl. *ūtuntur*, 1sg.subj. *ūtar*, 2sg.subj. *ūtāre*, 1pl.subj.*utāmur* 2pl.subj. *ūtāminī*, 3pl.subj. *ūtantur*

Ipf. 3pl. *ūtēbantur*, 1sg.ipf.subj. *ūterer*

Fut. 1pl. *ūtēmur*, 2sg.ipv. *ūtitor*

Perf. 1sg. *ūsus* sum

Non-fin. Perf.ptpc. *ūsus, -a, -um*, ger. *ūtendus, -a, -um*, inf. *ūtī*, *ūtier*

Spelled *oet-*, *oit-* in Old Latin.

Although *ūtor* usually takes the ablative (46 out of 74 times in Plautus, Flobert (loc.cit.)), there are a few instances in which it takes an accusative object, as in *Merc.* 145-6. Furthermore, *abūtor* (below) regularly takes the accusative.

Plautus, *Mercator* 145-6:

Dic mihi, an boni quid usquamst, **quod** quisquam **uti**
Tell.IPV me whether good.GEN any.NOM anywhere.is which.ACC anyone.NOM use.INF
possiet sine malo omni
can.3SG.SUBJ without evil.ABL any.ABL

"Tell me whether there is anything good at all that one can enjoy without any evil."

If the connection with Gk. fut. *oísomai* 'I will bring' (suppletive to *phérō*) is correct, the use with accusative objects may actually be the older one (thus also Flobert 1975: 44). The ablative may stem from the construction *alicuī aliquā rē ūsus est* 'Somebody$_{DAT}$ has use of/needs something$_{ABL}$' (*ūsus, -ūs* m. 'use') or from the influence of the semantically similar ***fungor***, where it must be inherited (cf. the entry of ***fungor***).

The gerundive *ūtendus, -a, -um* has the expected passive reading 'to be used' and is amply attested in Plautus in the construction *aliquid ūtendum dare* 'give sth. to be used' = 'lend sth.', e.g.:

Plautus, *Asinaria* 444:

Scyphos quos utendos dedi Philodamo, rettulit=ne?
cups.ACC which use.GER.ACC.PL give.1SG.PERF Philodamus.DAT return.3SG.PERF=PART

"The cups which I gave Philodamus to use (= which I lent to Philodamus), did he return them?"

- ***abūtor*** 'use up, consume'

  Lit.: See *ūtor*.

Fut.	1sg. *abūtar*
Perf.	1sg.m. *abūsus sum*, 3sg.f. *abūsast*
Non-fin.	Perf.ptcp. *abūsus, -a, -um*

  The perf.ptcp. *abusa* is passive in Plaut., *Asin.* 196 (Hofmann 1910: 13).

E.IV Denominal and deadjectival deponents

Present	Meaning	Base
arbitror[20]	'observe, witness'	*arbiter* 'witness'
commentor (re-)	'study, think about'	*mēns* 'mind'[21] or *commentum* 'fiction, invention'[22]
fabricor	'make, build'	*fabrica* 'workshop'
(cōn-)fābulor	'speak, chat'	*fābula* 'story'
(dē-, ē-)lūdi-fīcor[23]	'make fun of, mock'	*-fex* '-maker'
fūror	'steal'	*fūr* 'thief'
(dē-)frūstror	'deceive'	*frūstra* 'in error' (adv.)
interpretor	'explain, interpret	*interpres* 'intermediary'
lāmentor	'wail, lament'	*lāmenta* 'laments'
largior	'give, bestow'	*largus* 'abundant, large'
māchinor	'design, invent'	*māchina* 'engine, machine'

[20] Also passive, cp. Hofmann 1910: 32.

[21] See DELL: 397

[22] See LEW: II, 66/67, 70.

[23] Also formally active, see Hofmann (1910: 28).

Present	Meaning	Base
medicor[24]	'cure, heal'	*medicus* 'doctor'
(ē)mentior	'lie'	*mēns* 'mind'
(com-, prae-)mercor	'buy, trade'	*merx* 'goods, merchandise'
(com-)miseror[25]	'lament, commiserate'	*miser* 'wretched'
(ad-, ā-, dē-, ē-)mōlior	'endeavour, undertake'	*mōlēs* 'mass, bulk; toil, labor'
(com-, dē-, re-)moror	'wait, tarry; delay, hinder'	*mora* 'delay'
percontor	'question, explore'	*contus* 'pole, boat hook'[26]
perīclitor	'try, test'	*perīculum* 'test, attempt, danger'
potior[27]	'obtain, take possession of'	*potis* 'able'
rūminor (Liv. Andr.+)	'think over, muse on'	*rūmen* 'throat'
speculor	'spy out, explore'	*specula* 'watchtower'
(īn-)stipulor	'bargain, stipulate'	*stipula* 'stalk, halm'[28]
(an-, dē-, ob-)testor[29]	'call/declare as witness'	*testis* 'witness'
(con-)vador	'bind by bail, prosecute'	*vas* 'bail'

[24] Formally active forms are also found in Plautus, cp. Hofmann (1910: 41).

[25] Also reflexive in Plautus, see Hofmann (1910: 18).

[26] Thus DELL: 140f., arguing against a connection with *cūnctor* 'hesitate', cp. also Flobert (1975: 78, fn. 1). This verb is formally active in Naevius, cp. Hofmann (1910: 44).

[27] Also formally active, cp. Hofmann 1910: 27, DELL: 528f., etc.

[28] See Flobert (1975: 82, fn. 3).

[29] See Hofmann (1910: 15) on passive readings of the perfect participle.

References

Abraham, Werner, and Larisa Leisiö, ed. 2006. *Passivization and Typology*. Amsterdam/Philadelphia: John Benjamins.

Ackema, Peter, and Maaike Schoorlemmer. 1995. Middles and nonmovement. *Linguistic Inquiry* 26/2:173–97.

Adger, David. 2003. *Core Syntax: a Minimalist Approach*. Oxford University Press.

AiG II,2 = Debrunner, Albert. 1954. *Altindische Grammatik*, volume II,2: *Die Nominalsuffixe*. Göttingen: Vandenhoeck & Ruprecht.

Alexiadou, Artemis. 2001. *Functional Structure in Nominals: Nominalization and Ergativity*. Amsterdam/ Philadelphia: John Benjamins.

Alexiadou, Artemis. 2010. On the morpho-syntax of (anti-)causative verbs. In *Syntax, Lexical Semantics and Event Structure*, ed. M. Rappaport Hovav, E. Doron, and I. Sichel, 177–203. Oxford University Press.

Alexiadou, Artemis. 2012. Non-canonical passives revisited: parameters of non-active voice. *Linguistics* 50:1079–1110.

Alexiadou, Artemis. 2013. Where is non-active morphology? In *Proceedings of the 20th International Conference on Head-Driven Phrase Structure Grammar*, ed. S. Müller, 244–62. CSLI publications.

Alexiadou, Artemis, and Elena Anagnostopoulou. 2004. Voice morphology in the causative-inchoative alternation: evidence for a non-unified structural analysis of unaccusatives. In *The Unaccusativity Puzzle*, ed. A. Alexiadou, E. Anagnostopoulou, and M. Everaert, 114–36. Oxford University Press.

Alexiadou, Artemis, and Elena Anagnostopoulou. 2008. Structuring participles. In *Proceedings of the 26th West Coast Conference on Formal Linguistics*, ed. Ch. B. Chang and H. J. Haynie, 33–41. Somerville, MA: Cascadilla.

Alexiadou, Artemis, and Elena Anagnostopoulou. 2009. Agent, causer, and instrument PPs in Greek: implications for verbal structure. In *Proceedings of the 2007 Workshop in Greek*

Syntax and Semantics at MIT, ed. C. Halpert, J. Hartman, and D. Hill, 1–16. MIT Working Papers in Linguistics 57.

Alexiadou, Artemis, Elena Anagnostopoulou, and Florian Schäfer. 2006. The properties of anticausatives crosslinguistically. In *Phases of Interpretation*, ed. M. Frascarelli, 187–212. Berlin: Mouton de Gruyter.

Alexiadou, Artemis, and Edit Doron. 2012. The syntactic construction of two non-active voices: passive and middle. *Journal of Linguistics* 48:1–34.

Alexiadou, Artemis, Liliane Haegeman, and Melita Stavrou. 2007. *Noun Phrase in the Generative Perspective*. Berlin/New York: Mouton de Gruyter.

Alexiadou, Artemis, and Florian Schäfer, ed. 2013. *Non-Canonical Passives*. Amsterdam/Philadelphia: John Benjamins.

Alexiadou, Artemis, and Florian Schäfer. To appear. Towards a non-uniform analysis of naturally reflexive verbs. In *Proceedings of the 31st West Coast Conference on Formal Linguistics*.

Allan, Rutger J. 2003. *The Middle Voice in Ancient Greek*. Amsterdam: Gieben.

Anagnostopoulou, Elena. 1999. On experiencers. In *Studies in Greek Syntax*, ed. A. Alexiadou, G. Horrocks, and M. Stavrou, 67–93. Dordrecht: Kluwer.

Anagnostopoulou, Elena. 2003. Participles and voice. In *Perfect Explorations*, ed. A. Alexiadou, M. Rathert, and A. von Stechow, 1–36. Berlin/New York: Mouton de Gruyter.

Anagnostopoulou, Elena. 2014. Decomposing adjectival/stative passives. Paper given at the MIT Linguistics Colloquium, Feb. 14 2014.

Arad, Maya. 1996. A minimalist view of the syntax-lexical semantics interface. *UCL Working Papers in Linguistics* 8:215–42.

Arad, Maya. 1999. Whats counts as a class? The case of psych verbs. In *Papers from the UPenn/MIT Roundtable on the Lexicon*, ed. L. Pylkkänen, A. van Hout, and H. Harley, 1–23. MIT Working Papers in Linguistics 35.

Arce-Arenales, Manuel, Melissa Axelrod, and Barbara A. Fox. 1994. Active voice and middle diathesis: a cross-linguistic perspective. In *Voice: Form and Function*, ed. B. Fox and P. Hopper, 1–21. Amsterdam: John Benjamins.

Autenrieth, Georg. 1904. *A Homeric Dictionary for Schools and Colleges*. New York: American Book Company. Transl. from German by R. P. Keep.

Baerman, Matthew, Greville G. Corbett, Dunstan Brown, and Andrew Hippisley, ed. 2007. *Deponency and Morphological Mismatches*. Proceedings of the British Academy 145. Oxford University Press.

Baker, Mark. 1988. *Incorporation: a Theory of Grammatical Function Changing*. Chicago: University of Chicago Press.

Baker, Mark, Kyle Johnson, and Ian Roberts. 1989. Passive arguments raised. *Linguistic Inquiry* 20/2:219–51.

Baker, Mark, and Nadya Vinokurova. 2009. On agent nominalizations and why they are not like event nominalizations. *Language* 85/3:517–556.

Bakker, Egbert. 1994. Voice, aspect and Aktionsart: middle and passive in Ancient Greek. In *Voice: Form and Function*, ed. B. Fox and P. Hopper, 23–47. Amsterdam: John Benjamins.

Baldi, Philip. 1977. Remarks on the Latin *r*-form verbs. *Zeitschrift für vergleichende Sprachforschung* 90:222–57.

Bechtel, Friedrich. 1924. *Die griechischen Dialekte. Dritter Band: Der ionische Dialekt*. Berlin.

Beekes, Robert. 2010. *Etymological Dictionary of Greek, vol. I-II.* With the Assistance of Lucien van Beek. Leiden: Brill.

Belletti, Adriana, and Luigi Rizzi. 1988. Psych-verbs and θ-theory. *Natural Language and Linguistic Theory* 6/3:291–352.

Bendahman, Jadwiga. 1993. *Der reduplizierte Aorist in den indogermanischen Sprachen*. Egelsbach/New York: Hänsel-Hohenhausen.

Benedetti, Marina. 2006. Mehr als Passiv: über einige Verbalmorpheme in altindogermanischen Sprachen. *International Journal of Diachronic Linguistics and Linguistic Reconstruction* 3:91–110.

Benedetti, Marina. 2012. Valency alternations with perception verbs in Indo-European languages. In *The Indo-European Verb. Proceedings of the Society for Indo-European Studies, Los Angeles 13-15 Sept. 2010*, ed. H. C. Melchert, 1–6. Wiesbaden: Reichert.

Benveniste, Émile. 1966. *Problèmes de linguistique générale*. Paris: Gallimard.

Benveniste, Émile. 1969. *Le vocabulaire des institutions indo-européennes, vol. II: pouvoir, droit, religion*. Paris: Éditions de Minuit.

Benveniste, Émile. 1948. *Noms d'agent et noms d'action en indo-européen*. Paris: Adren

Maisonneuve.

Berez, Andrea L., and Stefan Th. Gries. 2010. Correlates to middle marking in Dena'ina iterative verbs. *International Journal of American Linguistics* 76/1:145–65.

Bjorkman, Bronwyn. 2011. BE-ing Default: The Morphosyntax of Auxiliaries. Doctoral Dissertation, MIT.

Bobaljik, Jonathan David. 2007. The limits of deponency: a Chukotko-centric perspective. In *Deponency and Morphological Mismatches*, ed. M. Baerman, G. G. Corbett, D. Brown, and A. Hippisley, 175–201. Oxford University Press.

Borer, Hagit. 1994. The projection of arguments. In *Functional Projections*, ed. E. Benedicto and J. Runner, University of Massachusetts Occasional Papers 17, 19–47. UMass Amherst.

Borer, Hagit. 2004. The grammar machine. In *The Unaccusativity Puzzle*, ed. A. Alexiadou, E. Anagnostopoulou, and M. Everaert, 288–331. Oxford University Press.

Borer, Hagit. 2005. *Structuring Sense, vol. II: The Normal Course of Events*. Oxford University Press.

Borer, Hagit. To appear. The category of roots. In *The Syntax of Roots and the Roots of Syntax*, ed. A. Alexiadou, H. Borer, and F. Schäfer. Oxford University Press.

Bosse, Solveig, Benjamin Bruening, and Masahiro Yamada. 2012. Affected experiencers. *Natural Language and Linguistic Theory* 30:1185–230.

Bruening, Benjamin. 2004. Verbal reciprocals. In *Pre-Conference Proceedings of the Workshop Demoting the Agent: Passive and other Voice-related Phenomena, University of Oslo, November 25-27 2004*, ed. T. Solstad, B. Lyngfelt, and M. F. Krave, 3–12.

Bruening, Benjamin. 2013. *By*-phrases in passives and nominals. *Syntax* 16/1:1–41.

Brugmann, Karl. 1895. Die mit dem Suffix *-to-* gebildeten Partizipia im Verbalsystem des Lateinischen und des Oskisch-Umbrischen. *Indogermanische Forschungen* 5:89–152.

Buck, Carl Darling. 1904. *A Grammar of Oscan and Umbrian. With a Collection of Inscriptions and a Glossary*. Boston: Ginn.

Buck, Carl Darling, and Walter Petersen. 1945. *A Reverse Index of Greek Nouns and Adjectives: Arranged by Terminations with Brief Historical Introductions*. Chicago: University of Chicago Press.

Burzio, Luigi. 1986. *Italian Syntax. A Government-Binding Approach*. Hingham, MA: Kluwer.

Cardona, George. 1960. The Indo-European Thematic Aorists. Doctoral Dissertation, Yale University.

Chantraine, Pierre. 1953-8. *Grammaire homérique*. Paris: Klincksieck.

Charnavel, Isabelle, Flavia Adani, and Nina Hyams. 2009. The online processing of French reflexives: experimental evidence for an unaccusative analysis. In *The Proceedings of the Tenth Tokyo Conference on Psycholinguistics*, ed. Y. Otsu, 67–91. Hituzi.

CHD = Güterbock, Hans G., Harry A. Hoffner and Theo P. J. van den Hout. 1980-. *The Hittite Dictionary of the Oriental Institute of the University of Chicago*. Chicago.

Cheung, Johnny. 2007. *Etymological Dictionary of the Iranian Verb*. Leiden: Brill.

Chierchia, Gennaro. 2004. A semantics for unaccusatives and and its syntactic consequences. In *The Unaccusativity Puzzle*, ed. A. Alexiadou, E. Anagnostopoulou, and M. Everaert, 22–59. Oxford University Press.

Chomsky, Noam. 1970. Remarks on Nominalization. In *Readings in English Transformational Grammar*, ed. R. Jacobs & P. Rosenbaum, 184–221. Waltham, Mass.: Ginn & Co.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: a Life in Language*, ed. M. Kenstowicz, 1–52. Cambridge, MA: MIT Press.

Claflin, Edith Frances. 1927. The nature of the Latin passive in the light of recent discoveries. *American Journal of Philology* 48/2:157–75.

Collins, Chris. 2005. A smuggling approach to the passive in English. *Syntax* 8/2:81–120.

Comrie, Bernard. 2006. Transitivity pairs, markedness, and diachronic stability. *Linguistics* 44/2:303–18.

Comrie, Bernard, and Maria Polinsky, ed. 1993. *Causatives and Transitivity*. Amsterdam/ Philadelphia: John Benjamins.

Condoravdi, Cleo. 1989. The middle: where semantics and morphology meet. *MIT Working Papers in Linguistics* 11:18–30.

Cowgill, Warren. 1983. On the prehistory of the Celtic passive and deponent inflection. *Ériu* 34:73–111.

De Vaan, Michiel. 2008. *Etymological Dictionary of Latin and the other Italic Languages*. Leiden: Brill.

Debrunner, Albert. 1917. *Griechische Wortbildungslehre*. Heidelberg: Winter.

Delbrück, Berthold. 1888. *Altindische Syntax*. Syntaktische Forschungen 5. Halle a.S.: Verlag der Buchhandlung des Waisenhauses.

DELG = Chantraine, Pierre. 1968-1980. *Dictionnaire étymologique de la langue grecque: histoire des mots*. Paris: Klincksieck.

DELL = Ernout, Alfred and Antoine Meillet. 1979. *Dictionnaire étymologique de la langue latine*. Paris: Klincksieck, 4th edition.

Doron, Edit. 2003. Agency and voice: the semantics of the Semitic templates. *Natural Language Semantics* 11:1–67.

Doron, Edit. 2005. The aspect of agency. In *The Syntax of Aspect: Deriving Thematic and Aspectual Interpretation*, ed. N. Erteschik-Shir and T. Rapoport, 154–73. Oxford University Press.

Dowty, David. 1979. *Word Meaning and Montague Grammar*. Dordrecht: Reidel.

Draeger, Anton. 1878. *Historische Syntax der lateinischischen Sprache*, volume I. Leipzig: Teubner, 2nd edition.

Eichner, Heiner. 1968. Hethitisch *u̯ešš-/u̯aššiia-* '(Gewänder) tragen; anziehen; bekleiden'. *Münchener Studien zur Sprachwissenschaft* 27:6–43.

Eichner, Heiner. 1970. Hethitisch *haššik(k)i-* und *hanneški-*. *Münchener Studien zur Sprachwissenschaft* 28:9–18.

Embick, David. 1997. Voice and the Interfaces of Syntax. Doctoral Dissertation, University of Pennsylvania.

Embick, David. 1998. Voice systems and the syntax/morphology interface. In *Papers from the UPenn/MIT Roundtable on Argument Structure and Aspect*, ed. H. Harley, 41–72. MIT Working Papers in Linguistics 32.

Embick, David. 2000. Features, syntax, and categories in the Latin perfect. *Linguistic Inquiry* 31/2:185–230.

Embick, David. 2004a. Unaccusative syntax and verbal alternations. In *The Unaccusativity Puzzle*, ed. A. Alexiadou, E. Anagnostopoulou, and M. Everaert, 137–58. Oxford University Press.

Embick, David. 2004b. On the structure of resultative participles in English. *Linguistic Inquiry* 35/3:355–92.

Embick, David. 2010. *Localism versus Globalism in Morphology and Phonology*. Cambridge, Mass.: MIT Press.

Embick, David, and Alec Marantz. 2008. Architecture and blocking. *Linguistic Inquiry* 39/1:1–53.

Embick, David, and Rolf Noyer. 1999. Locality in post-syntactic operations. *MIT Working Papers in Linguistics* 34: Papers in Morphology and Syntax:265–317.

Embick, David, and Rolf Noyer. 2001. Movement operations after syntax. *Linguistic Inquiry* 32/4:555–95.

Embick, David, and Rolf Noyer. 2007. Distributed morphology and the syntax/morphology interface. In *The Oxford Handbook of Linguistic Interfaces*, ed. G. Ramchand and Ch. Reiss, 289–324. Oxford University Press.

EWA I = Mayrhofer, Manfred. 1992. *Etymologisches Wörterbuch des Altindoarischen*, volume I. Heidelberg: Universitätsverlag Winter.

EWA II = Manfred Mayrhofer. 1996. *Etymologisches Wörterbuch des Altindoarischen*, volume II. Heidelberg: Universitätsverlag Winter.

Feist, Sigmund. 1939. *Vergleichendes Wörterbuch der gotischen Sprache. Mit Einschluss des Krimgotischen und sonstiger zerstreuter Überreste des Gotischen.* Dritte neubearbeitete und vermehrte Auflage. Leiden: Brill.

Flach, Dieter, ed. 2004. *Das Zwölftafelgesetz. Herausgegeben, übersetzt und kommentiert von Dieter Flach*. Darmstadt: Wissenschaftliche Buchgesellschaft.

Flobert, Pierre. 1975. *Les verbes déponents latins des origines à Charlemagne*. Paris: Belles Lettres.

Fortson, Benjamin W. IV. 2007. The origin of the Latin future active participle. In *Verba Docenti: Studies in Historical and Indo-European Linguistics Presented to Jay H. Jasanoff by Students, Colleagues, and Friends*, ed. A. J. Nussbaum, 83–95. Ann Arbor: Beech Stave.

Fortson, Benjamin W. IV. 2010. *Indo-European Language and Culture: an Introduction.* Blackwell, 2 edition.

Fox, Barbara, and Paul J. Hopper, ed. 1994. *Voice: Form and Function.* Amsterdam: John Benjamins.

Fraenkel, Ernst. 1912. *Geschichte der griechischen Nomina agentis auf -τήρ, -τωρ, -της (-τ-)*, volume II. Strassburg: Trübner.

Friedrich, Johannes. 1944. Wirkliche und angebliche Formen des Kohortativs beim hethitischen Verbum. *Orientalia* 13/3:205–13.

García Ramón, José Luis. 1991. Étymologie historique et synchronie homérique: δίε/ομαι, διερός, διῑπετής, διαίνω, δῑνέω et. I.E. *$d\hat{i}eh_1$-/di_1- "se hâter". *Revue de Philologie, de Litérature et d'Histoire Anciennes* 65/1:105–17.

García Ramón, José Luis. 1993. Griego ζατέω (: hom.-jon. δίζημαι), véd. *yā* 2 "pedir" e IE *$\hat{i}eh_2$- "pedir, buscar afanosamente". In *Miscellanea Linguistica Graeco-Latina*, ed. L. Isebaert, 71–84. Namur: Société des études classiques.

García Ramón, José Luis. 1999a. Zur Bedeutung indogermanischer Verbalwurzeln: *$h_2nek\hat{}$ 'erreichen, reichen bis', *$h_1nek\hat{}$ 'erhalten, wegnehmen'. In *Gering und doch von Herzen: 25 indogermanistische Beiträge Bernhard Forssman zum 65. Geburtstag*, ed. J. Habisreitinger, R. Plath, and S. Ziegler, 47–80. Wiesbaden: Reichert.

García Ramón, José Luis. 1999b. Griechisch Ζητήρ · Ζεὺς εν Κύπρῳ, vedisch *yātár*- "Rächer" und die Vertretung von *$\hat{i}$- im Griechischen. In *Compositiones Indogermanicae in Memoriam Jochem Schindler*, ed. H. Eichner, H.C. Luschützky, and V. Sadovski, 77–96. Prague: Enigma.

van Gelderen, Elly. 2011. Valency changes in the history of English. *Journal of Historical Linguistics* 1/1:106–43.

Geldner, Karl F. 1951. *Der Rig-Veda aus dem Sanskrit ins Deutsche übersetzt, vol. I-III*. Harvard Oriental Series 33-35. Cambridge, Mass.

GEW = Frisk, Hjalmar. 1960-72. *Griechisches etymologisches Wörterbuch, vol. I-III*. Heidelberg: Winter.

Givón, Talmy, and Lynne Yang. 1994. The rise of the English GET-passive. In *Voice: Form and Function*, ed. B. Fox and P. Hopper, 119–49. Amsterdam: John Benjamins.

Gonda, Jan. 1951. *Remarks on the Sanskrit Passive*. Leiden: Brill.

Gonda, Jan. 1960. Reflections on the Indo-European medium. *Lingua* 9:30–67; 175–93.

Gonda, Jan. 1979. *The Medium in the Ṛgveda*. Leiden: Brill.

Gotō, Toshifumi. 1987. *Die "I. Präsensklasse" im Vedischen. Untersuchung der vollstufigen thematischen Wurzelpräsentia*. Verlag der Österreichischen Akademie der Wissenschaften.

Gotō, Toshifumi. 1991. Materialien zu einer Liste altindischer Verbalformen: 4. *dogh/dugh/doh/duh*, 5. *sav/su*, 6. ^{1}*sav^{i}/sū*, 7. ^{2}*(sav^{i}/)sū*. *Bulletin of the National Museum of Ethnology (Osaka)* 16/3:681–707.

Gotō, Toshifumi. 1997. Überlegungen zum urindogermanischen Stativ. In *Berthold Delbrück y la sintaxis indoeuropea hoy. Actas del coloquio de la Indogermanische Gesellschaft*, ed. E. Crespo and J.L. García Ramón, 165–192. Madrid: UAM, Wiesbaden: Reichert.

Gotō, Toshifumi. 2013. *Old Indo-Aryan Morphology and its Indo-Iranian Background*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Grassmann, Hermann. 1996. *Wörterbuch zum Rig-Veda. 6., von Maria Kozianka überarb. und erg. Aufl.* Wiesbaden: Harrassowitz.

Grestenberger, Laura. To appear. From inalienable possession to reflexivity: The development of Vedic *tanű-* 'body'. *Harvard Working Papers in Linguistics*.

Griffith, Aaron. 2010. Old Irish denominal and deadjectival deponents. Paper presented at *The Indo-European Verb. Conference of the Society for Indo-European studies*, Los Angeles, Sept. 13-15 2010.

Grimshaw, Jane. 1990. *Argument Structure*. Cambridge, Mass.: MIT Press.

Hackstein, Olav. 1995. *Untersuchungen zu den sigmatischen Präsensstammbildungen des Tocharischen*. Göttingen: Vandenhoeck & Ruprecht.

Hackstein, Olav. 2002. *Die Sprachform der homerischen Epen*. Wiesbaden: Reichert.

Haegeman, Liliane. 1985. The *get*-passive and Burzio's generalization. *Lingua* 66:53–77.

Hale, Kenneth, and Samuel J. Keyser. 1998. The basic elements of argument structure. *MIT Working Papers in Linguistics* 32:73–118.

Halle, Morris, and Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, ed. K. Hale and S.J. Keyser, 111–176. Cambridge, Mass.: MIT Press.

Harðarson, Jón Axel. 1993. *Studien zum urindogermanischen Wurzelaorist und dessen Vertretung im Indoiranischen und Griechischen*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Harðarson, Jón Axel. 1998. Mit dem Suffix *-eh_1- bzw. *-$(e)h_1$-i̯e/o-* gebildete Verbalstämme im Indogermanischen. In *Sprache und Kultur der Indogermanen. Akten der X. Fachtagung der Indogermanischen Gesellschaft, Innsbruck, 22.-28. September 1996*, ed. W. Meid, 323–339.

Harley, Heidi. 1999. Denominal verbs and Aktionsart. In *Papers from the UPenn/MIT Roundtable on the Lexicon*, ed. L. Pylkkänen, A. van Hout, and H. Harley, 73–85. MIT Working Papers in Linguistics 35.

Harley, Heidi. 2005. How do verbs get their names? Denominal verbs, manner incorporation, and the ontology of verb roots in English. In *The Syntax of Aspect: Deriving Thematic and Aspectual Interpretation*, ed. N. Erteschik-Shir and T. Rapoport, 42–64. Oxford University Press.

Harley, Heidi. 2009. The morphology of nominalizations and the syntax of *v*P. In *Quantification, Definiteness and Nominalization*, ed. M. Rathert and A. Giannadikou, 320–42. Oxford University Press.

Harley, Heidi. 2011. A minimalist approach to argument structure. In *The Oxford Handbook of Linguistic Minimalism*, ed. C. Boeckx, 426–47. Oxford University Press.

Harley, Heidi. 2013. External arguments and the Mirror Principle: on the distinctness of Voice and v. *Lingua* 125/1:34–57.

Harley, Heidi. To appear. On the identity of roots. *Theoretical Linguistics*.

Harley, Heidi, and Rolf Noyer. 1999. State-of-the-article: Distributed Morphology. *GLOT International* 4:3–9.

Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In *Causatives and Transitivity*, ed. B. Comrie and M. Polinsky, 98–111. Amsterdam/ Philadelphia: John Benjamins.

Haugen, Jason D., and Daniel Siddiqi. 2013. Roots and the derivation. *Linguistic Inquiry* 44/3:493–517.

HED = Puhvel, Jaan. 1984-. *Hittite Etymological Dictionary*. Berlin/New York: Mouton.

HEG = Tischler, Johann. 1977-. *Hethitisches etymologisches Glossar. Mit Beiträgen von Günter Neumann*. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Hintze, Almut. 2000. Die avestische Wurzel *mad* 'zumessen'. In *Indoarisch, Iranisch und die Indogermanistik. Arbeitstagung der Indogermanischen Gesellschaft vom 2.-5. Oktober in Erlangen*, ed. B. Forssman and R. Plath, 163–75. Wiesbaden: Reichert.

Hoffmann, Karl. 1967. *Der Injunktiv im Veda. Eine synchronische Funktionsuntersuchung*. Heidelberg: Universitätsverlag Winter.

Hoffmann, Karl, and Johanna Narten. 1989. *Der sasanidische Archetypus. Untersuchungen zu Schreibung und Lautgestalt des Avestischen*. Wiesbaden: Reichert.

Hoffner, Harry A. Jr. 1997. *The Laws of the Hittites: a Critical Edition*. Leiden: Brill.

Hoffner, Harry A. Jr., and H. Craig Melchert. 2008. *A Grammar of the Hittite Language. Part I: Reference Grammar*. Winona Lake, Ind.: Eisenbrauns.

Hofmann, Johann B. 1910. *De verbis quae in prisca latinitate extant deponentibus*. Greifswald: Abel. Ph.D. thesis, Munich 1910.

Hollifield, Patrick. 1977. On the System of Conjugation in Proto-Indo-European. Doctoral Dissertation, Harvard University.

Hollifield, Patrick. 1978. Indo-European etymologies. *Journal of Indo-European Studies* 6:173–83.

Holton, David, Peter Mackridge, and Irene Philippaki-Warburton. 1997. *Greek: a Comprehensive Grammar of the Modern Language*. London/New York: Routledge.

Horvath, Julia, and Tal Siloni. 2011. Anticausatives: against reflexivization. *Lingua* 121/15:2176–86.

Huang, C.-T. James. 2013. Variations in non-canonical passives. In *Non-Canonical Passives*, ed. A. Alexiadou and F. Schäfer, 95–114. Amsterdam/Philadelphia: John Benjamins.

Humbach, Helmut. 1956. Gathisch-awestische Verbalformen (1. *išasa-*, 2. *xšnəvīšā*, 3. *yasō(.)hyən*, 4. *yečā*). *Münchener Studien zur Sprachwissenschaft* 9:66–78.

HW = Friedrich, Johannes and Annelies Kammenhuber. 1975-84. *Hethitisches Wörterbuch. 2. völlig neu bearbeitete Auflage*. Heidelberg: Universitätsverlag Winter.

Iatridou, Sabine, Elena Anagnostopoulou, and Roumyana Izvorski. 2001. Observations about the form and meaning of the perfect. In *Ken Hale: a Life in Language*, ed. M. Kenstowicz, 189–238. Cambridge, Mass.: MIT Press.

Insler, Stanley. 1968. The origin of the Sanskrit passive aorist. *Indogermanische Forschungen* 73:312–46.

Insler, Stanley. 1972. Vedic *mamatsi*, *ámamdur* and *ī́yate*. *KZ (= Zeitschrift für Vergleichende Sprachforschung)* 86:93–103.

Insler, Stanley. 1975. *The Gāthās of Zarathustra*. Acta Iranica 8. Tehran-Liège: Bibliothèque Pahlavi/Leiden: E.J. Brill.

Insler, Stanley. 1997. Vedic denominatives to thematic *a*-stems. In *Sound Law and Analogy: Papers in Honor of Robert S. P. Beekes on the Occasion of his 60th Birthday*, ed. A. Lubotsky, 103–10. Amsterdam/Atlanta: Rodopi.

Jamison, Stephanie. 1979. Remarks on the expression of agency with the passive in Vedic. *KZ (= Zeitschrift für Vergleichende Sprachforschung)* 93:196–219.

Jamison, Stephanie. 1983. *Function and Form in the -áya-formations of the Rig Veda and the Atharva Veda*. Göttingen: Vandenhoeck & Ruprecht.

Jamison, Stephanie. 1990. The tense of the predicated past participle in Vedic and beyond. *Indo-Iranian Journal* 33:1–19.

Jamison, Stephanie. 1997. Vedic *anyá-* 'another, the other': syntactic disambiguation. In *Sound Law and Analogy. Papers in Honor of Robert S.P. Beekes on the Occasion of his 60th Birthday*, ed. A. Lubotsky, Leiden Studies in Indo-European 9, 111–18. Amsterdam: Rodopi.

Jankuhn, Harald. 1969. *Die passive Bedeutung medialer Formen untersucht an der Sprache Homers*. Göttingen: Vandenhoeck & Ruprecht.

Jasanoff, Jay. 1977. The *r*-endings of the IE middle. *Die Sprache* 23:159–70.

Jasanoff, Jay. 1978. *Stative and Middle in Indo-European*. Innsbrucker Beiträge zur Sprachwissenschaft 23. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Jasanoff, Jay. 1979. The position of the *ḫi*-conjugation. In *Hethitisch und Indogermanisch. Vergleichende Studien zur historischen Grammatik und zur dialektgeographischen Stellung der indogermanischen Sprachgruppe Altkleinasiens (= Innsbrucker Beiträge zur Sprachwissenschaft 25)*, ed. E. Neu and W. Meid, 79–90. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Jasanoff, Jay. 1988. PIE **ĝnē-* 'recognize, know'. In *Die Laryngaltheorie und die Rekonstruktion des indogermanischen Laut- und Formensystems*, ed. A. Bammesberger. Heidelberg: Winter.

Jasanoff, Jay. 1994. Aspects of the internal history of the PIE verbal system. In *Früh-, Mittel-, und Spätindogermanisch. Akten der IX. Fachtagung der Indogermanischen Gesellschaft*, ed. G. E. Dunkel, G. Meyer, S. Scarlata, and Ch. Seidl, 149–68.

Jasanoff, Jay. 1998. The thematic conjugation revisited. In *Mír Curad: Studies in Honor of Calvert Watkins*, ed. J. Jasanoff, H. C. Melchert, and L. Oliver, Innsbrucker Beiträge zur Sprachwissenschaft 92, 301–16. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Jasanoff, Jay. 2003. *Hittite and the Indo-European Verb*. Oxford University Press.

Jasanoff, Jay. 2004. "Stative" **-ē-* revisited. *Die Sprache* 43 (2002-03 [2004]):127–170.

Jasanoff, Jay. 2006. The origin of the Latin gerund and gerundive: a new proposal. In *Rus' Writ Large: Languages, Histories, Cultures. Essays Presented in Honor of Michael S. Flier on his Sixty-Fifth Birthday*, ed. H. Goldblatt and N. S. Kollman, 195–208. Harvard Ukrainian Studies 28/1-4 (2006 [2010]).

Jasanoff, Jay. 2012a. Did Hittite have *si*-imperatives? In *The Sound of Indo-European II*, ed. R. Sukač and O. Šefčík. München: Lincom.

Jasanoff, Jay. 2012b. The Tocharian subjunctive and preterite in *-*a*-. In *Multi Nominis Grammaticus. Studies in Classical and Indo-European Linguistics in Honor of Alan J. Nussbaum on the Occasion of his Sixty-Fifth Birthday*, ed. A. I. Cooper, J. Rau, and M. Weiss, 105–20. Anne Arbor/New York: Beech Stave.

Jasanoff, Jay. 2012c. Long-vowel preterites in Indo-European. In *The Indo-European Verb. Proceedings of the Conference of the Society for Indo-European Studies, Los Angeles 13-15 Sept. 2010*, ed. H. C. Melchert, 127–35. Wiesbaden: Reichert.

Jasanoff, Jay. To appear. PIE *$\widehat{u}$*eid*- 'notice' and the origin of the thematic aorist. In *Proceedings of Etymology and the European Lexicon. 14th Fachtagung of the Indogermanische Gesellschaft, 17-22 Sept. 2012*.

Kallulli, Dalina. 2006. Argument demotion as feature suppression. In *Demoting the Agent: Passive, Middle and Other Voice Phenomena*, ed. B. Lyngfelt and T. Solstad, 143–66. Amsterdam/Philadelphia: John Benjamins.

Kallulli, Dalina. 2007. Rethinking the passive/anticausative distinction. *Linguistic Inquiry* 38/4:770–80.

Kallulli, Dalina. 2013. (Non-)canonical passives and reflexives: deponents and their like. In *Non-Canonical Passives*, ed. A. Alexiadou and F. Schäfer, 337–58. Amsterdam/Philadelphia: John Benjamins.

Katz, Hartmut. 2003. *Studien zu den älteren indoiranischen Lehnwörtern in den uralischen Sprachen. Aus dem Nachlaß, herausgegeben von P. Widmer, A. Widmer, und G. Klumpp*. Heidelberg: Winter.

Kaufmann, Ingrid. 2007. Middle voice. *Lingua* 117:1677–714.

Kellens, Jean. 1984. *Le verbe avestique*. Wiesbaden: Reichert.

Kellens, Jean. 1995. *Liste du verbe avestique*. Wiesbaden: Reichert.

Kemmer, Suzanne. 1993. *The Middle Voice*. Amsterdam: John Benjamins.

Kemmer, Suzanne. 1994. Middle voice, transitivity, and the elaboration of events. In *Voice:*

Form and Function, ed. B. Fox and P. Hopper, 179–230. Amsterdam: John Benjamins.

Keyser, Samuel Jay, and Thomas Roeper. 1984. On the middle and ergative constructions in English. *Linguistic Inquiry* 15/3:381–416.

Kimball, Sara E. 1999. *Hittite Historical Phonology*. Innsbrucker Beiträge zur Sprachwissenschaft 95. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Kiparsky, Paul. 2005. Blocking and periphrasis in inflection paradigms. In *Yearbook of Morphology 2004*, 113–35. Dordrecht: Springer.

Klaiman, Miriam H. 1991. *Grammatical Voice*. Cambridge University Press.

Klingenschmitt, Gert. 1970. Griechisch ἰλάσκεσθαι. *Münchener Studien zur Sprachwissenschaft* 28:75–88.

Klingenschmitt, Gert. 1982. *Das altarmenische Verbum*. Wiesbaden: Reichert.

Kloekhorst, Alwin. 2008. *Etymological Dictionary of the Hittite Inherited Lexicon*. Leiden: Brill.

Kümmel, Martin. 1996. *Stativ und Passivaorist im Indoiranischen*. Göttingen: Vandenhoeck & Ruprecht.

Kümmel, Martin. 2000a. *Das Perfekt im Indoiranischen. Eine Untersuchung der Form und Funktion einer ererbten Kategorie des Verbums und ihrer Weiterentwicklung in den altindoiranischen Sprachen*. Wiesbaden: Reichert.

Kümmel, Martin. 2000b. Der Aorist der Wurzel(n) *ar* im Indoiranischen. In *Indoarisch, Iranisch und die Indogermanistik. Arbeitstagung der Indogermanischen Gesellschaft vom 2. bis 5. Oktober 1997 in Erlangen*, ed. B. Forssman and R. Plath, 253–66. Wiesbaden: Reichert.

Kümmel, Martin. 2014a. Avestische Verbliste. Ms., University of Jena.

Kümmel, Martin. 2014b. Liste hethitischer Verben. Ms., University of Jena.

König, Ekkehard, and Volker Gast, ed. 2008. *Reciprocals and Reflexives: Theoretical and Typological Explorations*. Berlin/Amsterdam: De Gruyter.

Kortlandt, Frederik. 2007. *Italo-Celtic Origins and Prehistoric Development of the Irish Language*. Amsterdam: Rodopi.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase Structure and the Lexicon*, ed. J. Rooryck and L. Zaring, 109–37. Dordrecht: Kluwer.

Kratzer, Angelika. 2004. Telicity and the meaning of objective case. In *The Syntax of Time*, ed. J. Guéron and J. Lecarme, 389–423. Cambridge, Mass.: MIT Press.

Kulikov, Leonid. 2006. The Vedic medio-passive aorists, statives and their participles: reconsidering the paradigm. In *Themes and Tasks in Old and Middle Indo-Aryan Linguistics. Papers of the 12th World Sanskrit Conference*, volume 5, 45–3. Delhi: Motilal Banarsidass.

Kulikov, Leonid. 2007a. Reciprocal constructions in Vedic. In *Reciprocal Constructions*, ed. V. P. Nedjalkov, E. Š. Geniušienė, and Z. Guentchéva, 709–28. Amsterdam/Philadelphia: John Benjamins.

Kulikov, Leonid. 2007b. Grammaticalization of a reciprocal pronoun in a diachronic typological perspective: evidence from Vedic and Indo-European. In *Actes du XXIX^{ème} Colloque International de Linguistique Fonctionelle, Helsinki 2005*, ed. J. Härmä, E. Havu, M. Helkkula, M. Larjavaara, M. Lehtinen, and U. Tuomarla, 119–24. Helsinki: Département des langues romanes de l'Université de Helsinki.

Kulikov, Leonid. 2012. *The Vedic -ya-presents. Passives and Intransitivity in Old Indo-Aryan*. Amsterdam/New York: Rodopi.

Kulikov, Leonid, and Nikolaos Lavidas. 2013. Reconstructing passive and voice in Proto-Indo-European. *Journal of Historical Linguistics* 3/1:98–121.

Kümmel, Martin. 1998. Wurzelpräsens neben Wurzelaorist im Indogermanischen. *Historische Sprachforschung* 111:191–208.

van de Laar, Henri M.F.M. 2000. *Description of the Greek Individual Verbal Systems*. Amsterdam: Rodopi.

Lavidas, Nikolaos, and Dimitra Papangeli. 2007. Deponency in the diachrony of Greek. In *Deponency and Feature Mismatches*, ed. M. Baerman, G. G. Corbett, D. Brown, and A. Hippisley, 97–126. Oxford University Press.

Lekakou, Maria. 2002. Middle semantics and its realization in English and Greek. *UCL Working Papers in Linguistics* 14:399–416.

Lekakou, Maria. 2005. In the Middle, Somewhat Elevated: the Semantics of Middles and its Crosslinguistic Realization. Doctoral Dissertation, University College London.

Leumann, Manu. 1977. *Lateinische Laut- und Formenlehre*. Lateinische Grammatik, vol. I. München: Beck.

Levin, Beth. 1993. *English Verb Classes and Alternations: a Preliminary Investigation*. University of Chicago Press.

Levin, Beth, and Malka Rappaport. 1988. Nonevent *-er* nominals: a probe into argument structure. *Linguistics* 26:1067–83.

Levin, Beth, and Malka Rappaport Hovav. 1995. *Unaccusativity: at the Syntax-Lexical Semantics Interface*. Cambridge, Mass.: MIT Press.

LEW = Walde, Alois, and Johann B. Hofmann. 1938-54. *Lateinisches etymologisches Wörterbuch*. Heidelberg: Winter.

Lidz, Jeffrey. 1999. Causativity, Late Insertion, and the projection of *v*P. In *Papers from the UPenn/MIT Roundtable on the Lexicon*, ed. L. Pylkkänen, A. van Hout, and H. Harley, 117–36. MIT Working Papers in Linguistics 35.

Lidz, Jeffrey. 2001. The argument structure of verbal reflexives. *Natural Language and Linguistic Theory* 19:311–53.

Liebich, Bruno. 1922. *Materialien zum Dhātupāṭha*. Sitzungsberichte der Heidelberger Akademie der Wissenschaften 1921/7. Heidelberg: Universitätsverlag Winter.

Lindeman, Frederik Otto. 1972. Zu dem sog. "protero-dynamischen" Medium im Indogermanischen. *Norwegian Journal of Linguistics* 65–79.

Lindsay, Wallace M., ed. 1913. *Sexti Pompei Festi De verborum significatu quae supersunt cum Pauli epitome*. Leipzig: Teubner.

Livingston, Ivy. 2004. *A Linguistic Commentary on Livius Andronicus*. New York/London: Routledge.

LIV^2 = Rix, Helmut. 2001. *Lexikon der Indogermanischen Verben. Bearbeitet von Martin Kümmel, Thomas Zehnder, Reiner Lipp und Brigitte Schirmer*. Wiesbaden: Reichert, 2$^{\text{nd}}$ edition.

Lowe, John. 2012a. The Syntax and Semantics of Tense-Aspect Stem Participles in Early Ṛgvedic Sanskrit. Doctoral Dissertation, University of Oxford.

Lowe, John. 2012b. Caland adjectives and participles in the Ṛgveda: the case of *-āna-*. In *Proceedings of the 23rd Annual UCLA Indo-European Conference, Oct. 28-29 2011*, ed. S. Jamison, H.C. Melchert, and B. Vine, 83–98.

Lowe, John. 2013. Aorist participles in the Ṛgveda. Paper presented at the 25$^{\text{th}}$ Annual UCLA Indo-European Conference, Oct. 25-26 2013.

Lubotsky, Alexander. 1997. *A Ṛgvedic Word Concordance, vol. I-II*. New Haven: American Oriental Society.

Macdonell, Arthur A. 1910. *A Vedic Grammar*. Strassburg: Karl J. Trübner.

Malzahn, Melanie. 2002. Toch. B *yesti nāskoy* und der Narten-Charakter der idg. Wurzel *$\underset{\sim}{u}$*es* "Kleidung anhaben". *Die Sprache* 43/2:212–220.

Malzahn, Melanie. 2010. *The Tocharian Verbal System*. Leiden: Brill.

Manney, Linda Joyce. 2000. *Middle Voice in Modern Greek*. Amsterdam: John Benjamins.

Manolessou, Io. 2005. From participles to gerunds. In *Advances in Greek Generative Syntax: in Honor of Dimitra Theophanopoulou-Kontou*, ed. M. Stavrou and A. Terzi, 241–83. Amsterdam/Philadelphia: John Benjamins.

Manzini, M. Rita, Anna Roussou, and Leonardo M. Savoia. Forthcoming. Middle-passive voice in Albanian and Greek.

Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. In *Proceedings of the 21st Annual Penn Linguistics Colloquium*, ed. A. Dimitriadis, L. Siegel, C. Surek-Clark, and A. Williams, University of Pennsylvania Working Papers in Linguistics 4/2, 201–25. Philadelphia: University of Pennsylvania.

Masson, Olivier. 1983. *Les inscriptions cypriotes syllabiques*. Paris: École française d'Athènes.

Mayrhofer, Manfred. 1986. *Indogermanische Grammatik I, 2. Halbband: Lautlehre [Segmentale Phonologie des Indogermanischen]*. Heidelberg: Winter.

McGinnis, Martha. 1999. Reflexive clitics and the specifiers of vP. In *Papers from the UPenn/MIT Roundtable on the Lexicon*, ed. L. Pylkkänen, A. van Hout, and H. Harley, MIT Working Papers in Linguistics 35, 137–60.

Meier-Brügger, Michael. 2010. *Indogermanische Sprachwissenschaft*. Berlin: De Gruyter, 9$^{\text{th}}$ edition.

Meillet, Antoine. 1896. Latin *vēnārī*. *Mémoires de la Société de Linguistique de Paris* 9:55–7.

Meiser, Gerhard. 1998. *Historische Laut- und Formenlehre der lateinischen Sprache*. Darmstadt: Wissenschaftliche Buchgesellschaft.

Meiser, Gerhard. 2003. *Veni, vidi, vici: die Vorgeschichte des lateinischen Perfektsystems*. München: H.C. Beck.

Meiser, Gerhard. 2009. Zur Typologie des urindogermanischen Mediums. In *Protolanguage and Prehistory. Akten der XII. Fachtagung der Indogermanischen Gesellschaft, vom 11. bis 15. Oktober 2004 in Krakau*, ed. R. Lühr and S. Ziegler, 318–34. Wiesbaden: Reichert.

Melchert, H. Craig. 1984. *Studies in Hittite Historical Phonology*. Zeitschrift für Vergleichende Sprachforschung: Ergänzungshefte 32. Göttingen: Vandenhoeck & Ruprecht.

Melchert, H. Craig. 1989. New Luvo-Lycian isoglosses. *Historische Sprachforschung* 102:23–45.

Melchert, H. Craig. 1994. *Anatolian Historical Phonology*. Amsterdam: Rodopi.

Melchert, H. Craig. 2011. The PIE verb for 'to pour' and medial $*h_3$ in Anatolian. In *Proceedings of the 22nd UCLA Indo-European Conference, Los Angeles Nov. 5-6 2010*, ed. S. Jamison, H. C. Melchert, and B. Vine, 127–32.

Melchert, H. Craig. 2012. Classified list of Hittite medio-passive verbs. Ms., UCLA.

Melchert, H. Craig. To appear. "Narten formations" versus "Narten roots". In *Proceedings of the Abeitstagung of the Society for Indo-European Studies on the Lengthened Grade in Indo-European*. Indogermanische Forschungen.

Merchant, Jason. To appear. How much context is enough? Two cases of span-conditioned stem allomorphy. *Linguistic Inquiry*.

Miller, Jared L. 2004. *Studies in the Origins, Development and Interpretation of the Kizzuwatna Rituals*. Studien zu den Boğazköy-Texten 46. Wiesbaden: Harrassowitz.

Müller, Gereon. 2013. Approaches to deponency. *Language and Linguistics Compass* 7/6:351–69.

Narten, Johanna. 1964. *Die sigmatischen Aoriste im Veda*. Wiesbaden: Reichert.

Narten, Johanna. 1968a. Zum "proterodynamischen" Wurzelpräsens. In *Pratidânam: Indian, Iranian and Indo-European Studies Presented to F.B.J. Kuiper on his 60th Birthday*, ed. J.C. Heestermann, 68–88. The Hague: The Hague: Mouton.

Narten, Johanna. 1968b. Das altindische Verb in der Sprachwissenschaft. *Die Sprache* 14:113–34.

Narten, Johanna. 1986. *Der Yasna Haptaŋhāiti*. Wiesbaden: Reichert.

Nedjalkov, Vladimir P., Emma Š. Geniušienė, and Zlatka Guentchéva, ed. 2007. *Reciprocal Constructions*. Amsterdam/Philadelphia: John Benjamins.

Neu, Erich. 1968a. *Interpretation der hethitischen mediopassiven Verbalformen*. Studien zu den Boğazköy-Texten 5. Wiesbaden: Harrassowitz.

Neu, Erich. 1968b. *Das hethitische Mediopassiv und seine indogermanischen Grundlagen*.

Studien zu den Boğazköy-Texten 6. Wiesbaden: Harrassowitz.

Neu, Erich. 1980. *Althethitische Ritualtexte in Umschrift.* Studien zu den Boğazköy-Texten 25. Wiesbaden: Harrassowitz.

van Nooten, Barend A., and Gary B. Holland, ed. 1994. *Rig Veda. A Metrically Restored Text with an Introduction and Notes*. Cambridge, Mass.: Harvard University Press.

Nussbaum, Alan J. 1994. Five Latin verbs from a root **leiḵ-*. *Harvard Studies in Classical Philology* 96:161–190.

Nussbaum, Alan J. 1996. Latin *acētum*, *acūtus*, *aurītus*, *avītus*: four of a kind? Paper presented at the 15. East Coast Indo-European Conference, Yale University.

Nussbaum, Alan J. 1998. More on "decasuative" nominal stems in IE. Paper presented at the 17th East Coast Indo-European Conference, University of North Carolina, Chapel Hill.

Oettinger, Norbert. 1976a. *Die militärischen Eide der Hethiter*. Studien zu den Boğazköy-Texten 22. Wiesbaden: Harrassowitz.

Oettinger, Norbert. 1976b. Der indogermanische Stativ. *Münchener Studien zur Sprachwissenschaft* 34:109–49.

Oettinger, Norbert. 1979. *Die Stammbildung des hethitischen Verbums*. Nürnberg: Hans Carl.

Oettinger, Norbert. 1992. Zur Funktion des indogermanischen Stativs. In *Indogermanica et Italica: Festschrift für Helmuth Rix zum 65. Geburtstag*, ed. G. Meiser and J. Bendahman, Innsbrucker Beiträge zur Sprachwissenschaft 72, 347–61. Innsbruck : Institut für Sprachwissenschaft der Universität Innsbruck.

Oettinger, Norbert. 2007. Der hethitische Imperativ auf *-i* vom Typ *paḫši* 'schütze!'. In *Tabularia Hethaeorum. Hethitische Beiträge Silvin Košak zum 65. Geburtstag*, ed. D. Groddek and M. Zorman, Dresdner Beiträge zur Hethitologie 25, 561–68. Wiesbaden: Harrassowitz.

Oikonomou, Despina. 2013. Middle voice in Modern Greek: same mechanism in different environments. Paper presented at MIT Syntax Square, Oct. 22 2013.

Oikonomou, Despina. 2014. In the middle of passive: middle voice in Modern Greek vs. passive voice in English. Ms., MIT.

Oldenberg, Hermann. 1912. *Ṛgveda. Textkritische und exegetische Noten, siebentes bis zehntes Buch*. Berlin.

Papangeli, Dimitra, and Nikolaos Lavidas. 2009. Deponents and non-finite constructions in

Greek. In *Proceedings of the 2007 Workshop in Greek Syntax and Semantics at MIT*, ed. C. Halpert, J. Hartman, and D. Hill, MIT Working Papers in Linguistics 57, 197–211.

Perlmutter, David, and Paul Postal. 1984. The 1-advancement exclusiveness law. In *Studies in Relational Grammar, vol. II*, ed. D. Perlmutter and C. G. Rosen, 81–125. Chicago: University of Chicago Press.

Pesetsky, David. 1995. *Zero Syntax: Experiencers and Cascades*. Cambridge, Mass.: MIT Press.

Pesetsky, David. 2009. Passive, deponency, and tense: comments on the paper by Papangeli and Lavidas. In *Proceedings of the 2007 Workshop in Greek Syntax and Semantics at MIT*, ed. C. Halpert, J. Hartman, and D. Hill, 213–19. MIT Working Papers in Linguistics 57.

Pesetsky, David, and Esther Torrego. 2007. The syntax of valuation and the interpretability of features. In *Phrasal and Clausal Architecture: Syntactic Derivation and Interpretation. In Honor of Joseph E. Emonds*, ed. V. Samiian S. Karimi and W. K. Wilkins, 262–94. Amsterdam: John Benjamins.

Peters, Martin. 1980. *Untersuchungen zur Vertretung der indogermanischen Laryngale im Griechischen*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Pinault, Georges-Jean. 1982. L'expression indo-européenne de la nomination. *Études indo-européennes* 3:15–36.

Puhvel, Jaan. 1986. Who were the Hittite *hurkilas pesnes*? In *O-o-pe-ro-si : Festschrift für Ernst Risch zum 75. Geburtstag*, ed. A. Etter, 151–55. Berlin/New York: De Gruyter.

Pylkkänen, Liina. 2008. *Introducing Arguments*. Cambridge, Mass.: MIT press.

Ramchand, Gillian. 1997. *Aspect and Predication: the Semantics of Argument Structure*. Oxford University Press.

Ramchand, Gillian. 2008. *Verb Meaning and the Lexicon: a First-phase Syntax*. Cambridge University Press.

Rau, Jeremy. 2009a. *Indo-European Nominal Morphology: the Decads and the Caland System*. Innsbrucker Beiträge zur Sprachwissenschaft 132. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Rau, Jeremy. 2009b. Myc. *te-re-ja* and the athematic inflection of the Greek contract verbs. In *East and West. Papers in Indo-European Studies*, ed. K. Yoshida and B. Vine, 181–88. Bremen: Hempen.

Reinhart, Tanya, and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24/4:657–720.

Reinhart, Tanya, and Tal Siloni. 2005. The lexicon-syntax parameter: reflexivization and other arity operations. *Linguistic Inquiry* 36/3:389–436.

Renou, Louis. 1961. *Études védiques et pāṇinéennes, vol. IX*. Paris: De Boccard.

Reuland, Eric. 2011. *Anaphora and Language Design*. Cambridge, Mass.: MIT Press.

Risch, Ernst. 1974. *Wortbildung der homerischen Sprache*. Berlin: De Gruyter, 2nd edition.

Ritter, Elizabeth, and Sara T. Rosen. 1998. Delimiting events in sytax. In *The Projection of Arguments*, ed. W. Greuder and M. Butt, 97–134. Stanford: CSLI Publications.

Rix, Helmut. 1970. Anlautender Laryngal vor Liquida oder Nasalis sonans im Griechischen. *Münchener Studien zur Sprachwissenschaft* 27:79–110.

Rix, Helmut. 1986. *Zur Entstehung des urindogermanischen Modussystems*. Innsbrucker Beiträge zur Sprachwissenschaft: Vorträge und kleinere Schriften 36. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Rix, Helmut. 1988. The Proto-Indo-European middle: content, forms, and origin. *Münchener Studien zur Sprachwissenschaft* 49:101–19.

Rix, Helmut. 1992. *Historische Grammatik des Griechischen. Laut- und Formenlehre*. Darmstadt: Wissenschaftliche Buchgesellschaft, 2nd edition.

Roberts, Ian. 1987. *The Representation of Implicit and Dethematized Subjects*. Dordrecht: Foris.

Roberts, Ian, and Anna Roussou. 2003. *Syntactic Change: a Minimalist Approach to Grammaticalization*. Cambridge University Press.

Rooryck, Johan, and Guido Vanden Wyngaerd. 2011. *Dissolving Binding Theory*. Oxford University Press.

Rost, Liane. 1953. Ein hethitisches Ritual gegen Familienzwist. *Mitteilungen des Instituts für Orientforschung* 1/3:345–79.

Roussou, Anna, and Ianthi-Maria Tsimpli. 2007. Clitics and transitivity. In *Studies in the Morphosyntax of Greek*, ed. A. Alexiadou, 138–74. Cambridge Scholars Publishing.

Sadler, Louise, and Andrew Spencer. 2001. Syntax as exponent of morphosyntactic features. In *Yearbook of Morphology 2000*, 71–96. Dordrecht: Springer.

Safir, Ken. 2004. *The Syntax of Anaphora*. Oxford University Press.

Schaefer, Christiane. 1994. *Das Intensivum im Vedischen*. Historische Sprachforschung: Ergänzungsheft 37. Göttingen: Vandenhoeck & Ruprecht.

Schäfer, Florian. 2009. The causative alternation. *Language and Linguistics Compass* 3/2:641–81.

Schindler, Jochem. 1972. L'apophonie des noms-racines indoeuropéens. *Bulletin de la Société de Linguistique de Paris* 67/1:31–8.

Schindler, Jochem. 1980. Zur Herkunft der altindischen *cvi*-Bildungen. In *Lautgeschichte und Etymologie. Akten der V. Fachtagung der indogermanischen Gesellschaft*, ed. M. Mayrhofer, M. Peters, and O. E. Pfeiffer, 386–93. Wiesbaden: Reichert.

Schmid, Wolfgang P. 1956. Vedisch *ímahe* und Verwandtes. *Indogermanische Forschungen* 62:219–39.

Schrijver, Peter. 1991. *The Reflexes of the Proto-Indo-European Laryngeals in Latin*. Amsterdam/Atlanta: Rodopi.

Schumacher, Stefan. 2004. *Die keltischen Primärverben: ein vergleichendes, etymologisches und morphologisches Lexikon. Unter Mitarbeit von Britta Schulze-Thulin und Caroline aan de Wiel*. Innsbrucker Beiträge zur Sprachwissenschaft 110. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Schwyzer, Eduard. 1939-71. *Griechische Grammatik, vol. I-III*. München: Beck.

Seebold, Elmar. 1970. *Vergleichendes und etymologisches Wörterbuch der germanischen starken Verben*. The Hague/Paris: Mouton.

Sihler, Andrew L. 1995. *New Comparative Grammar of Greek and Latin*. Oxford University Press.

Siloni, Tal. 2008. The syntax of reciprocal verbs: An overview. In *Reciprocals and Reflexives: Theoretical and Typological Explorations*, ed. E. König and V. Gast, 451–98. Berlin/New York: De Gruyter.

Smyth, Herbert W., and Gordon M. Messing. 1956. *Greek Grammar*. Cambridge, Mass.: Harvard University Press.

Solmsen, Felix. 1901. *Untersuchungen zur griechischen Laut- und Verslehre*. Strassburg: Trübner.

Spathas, Giorgos, Artemis Alexiadou, and Florian Schäfer. To appear. Middle voice and reflexive interpretations: *afto*-prefixation in Greek. *Natural Language and Linguistic Theory*.

Sportiche, Dominque. 1998. *Partitions and Atoms of Clause Structure: Subjects, Agreement, Case, and Clitics*. New York: Routledge.

Sportiche, Dominque. 2014. French reflexive *se*: Binding and Merge locality. In *Locality*, ed. E. O. Aboh, M. T. Guasti, and I. Roberts, 104–37. Oxford University Press.

Stahl, Johann M. 1907. *Kritisch-historische Syntax des griechischen Verbums der klassischen Zeit*. Heidelberg: Universitätsverlag Winter.

Stang, Christian. 1966. *Vergleichende Grammatik der baltischen Sprachen*. Oslo/Bergen/ Tromsø: Universitetsforlaget.

Steinbach, Markus. 2002. *Middle Voice: a Comparative Study in the Syntax-Semantics Interface of German*. Linguistik Aktuell, vol. 50. Amsterdam/Philadelphia: John Benjamins.

Stroik, Thomas. 1992. Middles and movement. *Linguistic Inquiry* 23:127–37.

Stroik, Thomas. 1999. Middle and reflexivity. *Linguistic Inquiry* 30/1:119–31.

Stump, Gregory T. 2007. A non-canonical pattern of deponency and its implications. In *Deponency and Morphological Mismatches*, ed. M. Baerman, G. G. Corbett, D. Brown, and A. Hippisley, 71–95. Oxford University Press.

Sundaresan, Sandhya. 2012. Context and (Co)reference in the Syntax and its Interfaces. Doctoral Dissertation, University of Stuttgart/University of Tromsø.

van Thiel, Helmut, ed. 1991. *Homeri Odyssea*. Hildesheim: Georg Olms.

Thieme, Paul. 1958. Sanskrit *edhate*. In *Sir Ralph Turner Jubilee Volume I, Presented on the Occasion of his Seventieth Birthday*, ed. S. Sen, Indian Linguistics 19, 149–58. Madras: Linguistic Society of India.

Thieme, Paul. 1971. *Kleine Schriften*, volume I, pt. I-II. Wiesbaden: Franz Steiner.

Tichy, Eva. 1995. *Die Nomina Agentis auf -tar- im Vedischen*. Heidelberg: Winter.

Tichy, Eva. 2001. *Indogermanistisches Grundwissen für Studierende sprachwissenschaftlicher Disziplinen*. Bremen: Hempen.

Traugott, Elizabeth, and Richard Dasher. 1987. On the historical relation between mental and speech act verbs in Japanese. In *Papers from the 7th International Conference on Historical Linguistics*, ed. A. G. Ramat, O. Carruba, and G. Bernini, 561–73. Amsterdam/Philadelphia: John Benjamins.

Tsimpli, Ianthi. 1989. On the properties of the passive affix in Modern Greek. *UCL Working*

Papers in Linguistics 1:235–60.

Tsimpli, Ianthi. 2000. Gerunds in Greek. *Journal of Greek Linguistics* 1:133–69.

Tucker, Elizabeth. 1990. *The Creation of Morphological Regularity: Early Greek Verbs in -éō, -áō, -óō and -íō*. Historische Sprachforschung, Ergänzungsheft 35. Göttingen: Vandenhoeck & Ruprecht.

Tuite, Kevin. 2002. Deponent verbs in Georgian. In *Philologie, Typologie und Sprachstruktur: Festschrift für Winfried Boeder zum 65. Geburtstag*, ed. W. Bublitz, M. von Roncador, and H. Vater, 375–89. Frankfurt am Main: Peter Lang.

Tuite, Kevin. 2007. Liminal morphosyntax: Georgian deponents and their kin. *Chicago Linguistics Society* 39/1:774–88.

Vahlen, Johannes. 1928. *Ennianae poesis reliquiae*. Leipzig: Teubner, 2nd edition.

van Valin, Robert D. Jr. 1990. Semanitic parameters of split intransitivity. *Language* 66/2:221–60.

Ventris, Michael, and John Chadwick. 1973. *Documents in Mycenaean Greek*. Cambridge University Press, 2nd edition.

VIA = Werba, Chlodwig. 1997. *Verba IndoArica. Die primären und sekundären Wurzeln der Sanskrit-Sprache. Pars I: Radices Primariae*. Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Villanueva Svensson, Miguel. 2003. La categoría de voz en el sistema verbal indoeuropeo. Doctoral Dissertation, Universidad complutense de Madrid.

Villanueva Svensson, Miguel. 2006. Old Lithuanian *pame(d)mi* 'imitate'. *Baltistica* 41/1:95–7.

Villanueva Svensson, Miguel. 2012. The ablaut of the middle root athematic presents in Indo-European. In *The Indo-European Verb. Proceedings of the Conference of the Society for Indo-European Studies, Los Angeles, 13-15 September 2010*, ed. H. C. Melchert, 333–42. Wiesbaden: Reichert.

Vine, Brent. 1998. The etymology of Greek κώμη and related problems. In *Mír Curad. Studies in Honor of Calvert Watkins*, ed. J. Jasanoff, H.C. Melchert, and L. Oliver, Innsbrucker Beiträge zur Sprachwissenschaft 92, 687–702. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Vine, Brent. 1999a. On 'Cowgill's Law' in Greek. In *Compositiones Indogermanicae in Memoriam Jochem Schindler*, ed. H. C. Luschützky and H. Eichner, 555–600. Prague: Enigma.

Vine, Brent. 1999b. Latin *-īnāre/ -īnārī*. *UCLA Indo-European Studies* 71–84.

Vine, Brent. 2012. Review of de Vaan, Etymological Dictionary of Latin and the Other Italic Languages. *Kratylos* 57:1–40.

Wackernagel, Jacob. 1916. *Sprachliche Untersuchungen zu Homer*. Göttingen: Vandenhoeck & Ruprecht.

Wackernagel, Jacob. 1920. *Vorlesungen über Syntax, mit besonderer Berücksichtigung von Griechisch, Lateinisch und Deutsch*. Basel: Birkhäuser.

Wackernagel, Jacob. 2009. *Lectures on syntax. With special reference to Greek, Latin, and Germanic. Edited by David Langslow*. Oxford University Press.

Wanner, Anja. 2013. The *get*-passive at the intersection of *get* and the passive. In *Non-Canonical Passives*, ed. A. Alexiadou and F. Schäfer, 43–61. Amsterdam/Philadelphia: John Benjamins.

Warmington, Eric H. 1935. *Remains of Old Latin, vol. I: Ennius and Caecilius*. Cambridge, Mass.: Harvard University Press/London: W. Heinemann.

Warmington, Eric H. 1936. *Remains of Old Latin, vol. II: Livius Andronicus, Naevius, Pacuvius and Accius*. Cambridge, Mass.: Harvard University Press/London: W. Heinemann.

Watkins, Calvert. 1962. Varia. II. *Ériu* 19:114–8.

Watkins, Calvert. 1969. *Geschichte der indogermanischen Verbalflexion*. Indogermanische Grammatik, III,1. Heidelberg: Winter.

Watkins, Calvert. 1971. Hittite and Indo-European studies: the denominative statives in *-ē-*. *Transactions of the Philological Society* 70/1:51–93.

Watkins, Calvert. 1975. La famille indo-européenne de grec ὄρχις: linguistique, poétique et mythologie. *Bulletin de la Société de Linguistique de Paris* 70/1:11–26.

Weiss, Michael. 2009. *Outline of the Historical and Comparative Grammar of Latin*. Beech Stave Press.

Weiss, Michael. To appear. "Sleep" in Latin and Indo-European: on the non-verbal origin of the Latin verb *sōpiō*. To appear in a forthcoming Festschrift.

Weisser, Philipp. 2010. Another View on Deponency. Master's thesis, University of Leipzig.

Weisser, Philipp. 2014. Mismatch verbs: a unified account of unaccusatives and deponents. In *Morphology and Meaning. Selected Papers from the 15th International Morphology Meeting,*

Vienna, February 2012, ed. F. Rainer, F. Gardani, H. C. Luschützky, and W. U. Dressler, 315–30.

Werba, Chlodwig. 1999. Jungavestisch *aiβiiāxšaiia-*. In *Compositiones Indogermanicae in Memoriam Jochem Schindler*, ed. H. Eichner, H.C. Luschützky, and V. Sadovski, 615. Prague: Enigma.

West, Martin L., ed. 1998-2000. *Homeri Ilias, vol. I-II*. Bibliotheca scriptorum Graecorum et Romanorum Teubneriana. Stuttgart/Leipzig: Teubner.

Whitney, William Dwight. 1879. *A Sanskrit Grammar*. Leipzig: Breitkopf & Härtel.

Whitney, William Dwight. 1885. *The Roots, Verb-forms, and Primary Derivatives of the Sanskrit Language*. Leipzig: Breitkopf & Härtel.

Widmer, Paul. 2004. *Das Korn des weiten Feldes*. Innsbrucker Beiträge zur Sprachwissenschaft 111. Innsbruck: Institut für Sprachwissenschaft der Universität Innsbruck.

Widmer, Paul. 2005. Der altindische *vṛ́kī*-Typus und hethitisch *nakkǐ̯-*: der indogermanische Instrumental zwischen Syntax und Morphologie. *Die Sprache* 45:190–208.

Williams, Edwin. 1987. English as an ergative language: the theta-structure of derived nouns. In *Papers from the 23rd Annual Regional Meeting of the Chicago Linguistic Society*, ed. B. Need, E. Schiller, and A. Bosch, 366–75. Chicago Linguistic Society.

Wolfart, Christoph H. 1996. Sketch of Cree, an Algonquian language. In *Handbook of North American Indians*, volume 17: Languages. Washington: Smithsonian Institution.

Woolford, Ellen. 2003. Burzio's generalization, markedness, and locality constraints on nominative objects. In *New Perspectives on Case Theory*, ed. E. Brandner and H. Zinsmeister, 299–327. Stanford: CSLI Publications.

Wurmbrand, Susi. 2012. Parasitic participles in Germanic: evidence for the theory of verb clusters. *Taal en tongval* 64/1:129–56.

Xu, Zheng, Mark Aronoff, and Frank Anshen. 2007. Deponency in Latin. In *Deponency and Morphological Mismatches*, ed. M. Baerman, G. G. Corbett, D. Brown, and A. Hippisley, 127–143. Oxford University Press.

Yoshida, Kazuhiko. 1990. *The Hittite Mediopassive Endings in -ri*. Untersuchungen zur indogermanischen Sprach- und Kulturwissenschaft 5. Berlin.

Zeijlstra, Hedde. 2012. There is only one way to Agree. *The Linguistic Review* 29:491–539.

Zombolou, Katerina, and Artemis Alexiadou. 2014. The canonical function of the deponent

verbs in Modern Greek. In *Morphology and Meaning. Selected Papers from the 15th International Morphology Meeting, Vienna, February 2012*, ed. F. Rainer, F. Gardani, H. C. Luschützky, and W. U. Dressler, 331–44.